



PAUL STARRETT

PAUL STARRÉTT
CHANGING THE SKYLINE

AN AUTOBIOGRAPHY

WITH THE COLLABORATION

OF WEBB WALDRON AND

A FOREWORD BY

BOB DAVIS

WHITTLESEY HOUSE

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TO MY SONS
PAUL, DANIEL, ANDREW
Haec olim meminisse juvabit

■

FOREWORD

HAVING no confidence whatever in a preface or an introduction designed to explain an author's reason for appearing between these covers, I take this opportunity to state in particular herewith how it happens that the writer is hooked up in my company, without which, if the truth were known, he might fare better. Nevertheless . . .

In the beginning of the present century, when Manhattan was little more than a parking place for squat buildings unfamiliar with the upper reaches, a gray structure, prowed like a ship, was anchored by Paul Starrett at the confluence of Broadway, Fifth Avenue, and Twenty-third Street. The Flatiron, people called it, prophesying that no other manipulator of stone, cement, and steel would have the nerve or the time to set up a loftier monument to the builder's art. In an astral sense, this tower of Babel mysteriously slipped its moorings and toured around the world, revealing in myriad illustrations its miraculous proportions.

From the eighteenth deck of the Flatiron, where I had

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a cabin, it was easy to keep an eye on the growth of land-craft as they took anchorage on the Island, to break up the horizon. Captain Starrett kept right on building until the lower half of Manhattan boasted in her dry harbor quite a fleet of stationary stone-and-steel ships, but the only one that ever had sea-going lines was the Flatiron—a wide traveler in a manner of speaking—and even to-day, thirty-five years after her launching, well-known and still the cause of much astonishment abroad.

From where I used to sit in my old stateroom, it was no trouble at all to see that the skipper had gone lock, stock, and barrel into building whatever called for a combination of bulk and beauty; colossal construction, or nothing. From 1905 to 1914, scanning the New York skyline, practically boxing the compass—frequently to the neglect of my own affairs—I saw the Hippodrome, Pennsylvania Station, National City Bank, Plaza Hotel, Hudson Terminal Buildings, and the Biltmore creep over the landscape or rise against the blue. There seemed to be among modern builders an epidemic of heroic design, a veritable competition in lofty ambitions.

It was natural that I should back the Skipper Starrett, whom I first met on the Flatiron, the mystery ship docked uptown in the mighty current swirling past her prow. Aground, that's what she was; her spirit only had gone to sea. After the World War, when I began to travel to all countries, in distant lands what should most often confront me, framed upon myriad walls, but the flagship of

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Captain Paul Starrett's flotilla—to me the last word in majesty.

He can't do it again, I thought. Once in a lifetime to perform such a miracle seemed enough. Out of the port of New York I made frequent exits abroad, finding nothing man-made that produced an equivalent thrill. With each returning trip, however, I observed that the horizon of the American metropolis revealed new pinnacles, mightier crags, vaster peaks of stone, soaring aloft in architectural splendor.

Sailing eastward past Fire Island out of the harbor, I always made it a practice to cast languishing eyes upon the vanishing spires of the home town sinking slowly in the western sea, aware that upon my return new structures would meet my gaze, hoping always with unrestrained fervor that the hand of Starrett would toss aloft another tower that might top them all.

Behold! Home-coming in 1930, after two years' absence, the whole harbor agleam in the June sunlight, my eyes caught the glittering apex of the Empire State Building: 102 stories, piled 1,245 feet aloft, nearly five times the height of the Flatiron, from which vantage point twenty-five years before I had watched Paul Starrett scaling marble scarps on the way to sign his name highest against the blue empyrean.

What he has written into this book constitutes a complete record of his triumphs in shaping raw materials to his will and giving animation to inanimate things. It is an

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epic on the achievement of human hands, to which this inconsequential foreword could add nothing.

Nevertheless . . .

BOB DAVIS

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Acknowledgment is due Mr. Frederick Whitton and Miss Emma F. Slater for their generous assistance in the preparation of the manuscript.

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CHANGING THE SKYLINE

WE Starretts are a breed of builders. My grandfather and several grandfathers before him were carpenter builders of the sort who flourished in this country two or three generations ago—men who built from practical knowledge and who built well. There is a family tradition that my grandfather built the first courthouse in Pittsburgh. My father was a preacher of the Gospel, but he was also a builder. He designed and built his own church and a house in which we lived in Lawrence, Kansas. In later years, we were all either builders or architects and all closely concerned with the creation and evolution of the skyscraper—the distinctive form of architecture this country has contributed to the world.

My four brothers and I were all concerned, one way or another, with building. Among us we built some of the first, some of the finest, some of the most famous and largest structures ever constructed in this country. We were all busy most of our lives with “changing the skyline.” I have chosen that title for my book, and I believe

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that our lives, so closely connected with the growth and development of many great cities, may have an interest over and above the purely personal. At any rate, I hope so.

There is something rather dramatic, I think, in the contrast between our lives as children and our careers afterwards. I wish I could make that contrast vivid. I am aware that a man's childhood and boyhood, no matter how real to him, are difficult to picture truly. He sees them through magic glasses. He can tell the facts but the spirit and glamour are difficult to put into words.

In 1864 my father, a young graduate of Princeton Theological Seminary, journeyed from Pennsylvania to Lawrence, Kansas, to take charge of a frontier church. He reached Lawrence just in time to witness Quantrell's raid, and narrowly escaped being shot. Later, he married a Quaker schoolteacher and brought his bride to Lawrence.

My brothers and sisters and I were all born in Lawrence. Our early life was lived in an America now completely gone. Through the vista of the years I look back to prairies which the Indians, with their squaws and papooses, were still crossing on their single-file trails. I remember standing one morning with a group of scared children in the city jail yard, where the six Sioux chiefs captured after the Custer massacre were incarcerated. As clearly as I see the aeroplane overhead today, I can see the long trains loaded with buffalo hides going through to

A PRAIRIE BOYHOOD



MY FATHER'S CHURCH

Presbyterian church designed and built by Rev. W. A. Starrett

the East.

In my youth the old West was already vanishing. Its passing was, in fact, already well under way.

From the prairie of those days to the piled-up masses of Manhattan today, from the old West to the newest East has been a long journey for me.

Lawrence was then a village of perhaps a thousand inhabitants, located on the Kansas, or Kaw, River about thirty miles west of Kansas City. The river furnished perpetual interest for us boys. In times of drought it was shallow, with protruding sand bars. At high water it was a raging flood. When the water was fairly low, disobeying the orders of our parents, we would go swimming. We would cross the shallows to the sand bars and hunt for soft-shelled turtles and their eggs. In time of flood it was

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thrilling and alarming to see settlers' cabins and their household goods and the driftwood which floated down under the bridge and tumbled over the dam.

A prairie life in Kansas meant life on a farm. We went barefoot, from early spring to late fall. Our farm was a twenty-acre plot on rich fertile land in the Kaw bottom. At that time it would raise anything, but it required hard work. Up and down the hot fields we older boys would ride farm horses, drawing a cultivator guided by our uncle or one of the farm hands. Working like this under the blazing sun was the only way to reduce the destruction of the drought and save the crop. In abundant years we would get 450 bushels of potatoes from an acre but, unfortunately, in such years there was no market. Corn went begging at ten cents a bushel and farmers burned it for fuel. Our cellar was stored with potatoes, turnips, and onions; but there was no place to dispose of them, and when spring came we had to shovel out the rotting heap and carry it to a dump. Eggs sold at six dozen for a quarter and butter at ten cents a pound.

Little money was to be had. I saw only "shinplasters"—five-, ten-, and twenty-five-cent paper bills—usually so worn and frazzled that it was hard to read the printing on them. Father's scanty salary was usually paid in farm produce: corn, potatoes, and other vegetables. If we had any spending money, we earned it ourselves.

About two acres of our farm were allotted to the three elder boys to be cultivated as we saw fit. We planted

A PRAIRIE BOYHOOD



Rev. W. A. Starrett's residence during Quantrell raid (941 *Rhode Island Street*)

mostly watermelons and cantaloupes, which flourished in the Kaw bottom. One season we had a wonderful crop, from which we expected to realize a satisfactory profit. About this time the railroads were engaged in moving a large Negro population from the South. They dumped several hundred of these people off at the North Lawrence station, about a quarter of a mile from our farm. The next morning after these immigrants were unloaded, we found that our watermelons were all gone and so was most of the fencing around our farm. The immigrants had stolen all the watermelons they could carry off and what they could not remove they had smashed. They had taken parts of the fence to make fires.

Life on a farm in old Kansas was hard but happy. Such a boyhood gives a man priceless and unforgettable recol-

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lections—the rising sun, the rich black earth, growing things, the warm nearness of cattle and horses, and the misty hills at night. There was, too, the sharp tang of the water as he plunged into the running stream, the pull of the fish on his line, the sweet sleep of deep fatigue, the bird shot down in mid-air, the feel of bare feet on the wet grass, the long evenings by an oil lamp with *Othello* and *Shylock*. Days of privation they doubtless were, but rich days too. To do without was normal and we thought nothing of it. We lived much as everybody else lived. Those were happy years, I must insist, and good training for the work to come.

Schooling in Kansas, at that time, was a primitive affair, but my mother and father were determined that we should be educated. Father himself was a fine Shakespearean scholar. He knew by heart entire acts of *Hamlet* and *Othello*. He enjoyed reading Shakespeare to us in the evenings and tried to instill in us a love for literature. He was deeply interested in education and literary work. He was one of the founders and first regents of the University of Kansas. He also became editor of the *Lawrence Daily Journal* and we boys used to go and watch the Negro operate by hand the press which printed the paper.

Father's theological views changed at that time and he became unwilling to subscribe to the dogmas of the Church. He severed his connection with the ministry and started to study law. My mother stepped in to fill the gap in our finances caused by my father's giving up even a

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NORTH LAWRENCE RESIDENCE

minister's limited income.

My mother was a remarkable woman. She was soon employed by the editor of the morning paper to gather and edit copy for him. Not long after that, she adopted another measure unprecedented at that time. She obtained an agency to sell Chickering pianos. She had been a music teacher and this was an advantage to her as a piano saleswoman. One result of the Chickering episode was that she managed to have a piano in our house most of the time, one of the instruments sent to her on consignment, and we Starrett children, though we might not have quite enough to eat or quite enough clothes, did have a piano. Some of us learned to play.

Mother had a vigorous, independent mind. She was an

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OUR FATHER
William A. Starrett

advocate of woman's suffrage when it took some courage to come out for it. Elizabeth Cady Stanton and Susan B. Anthony stopped in Lawrence to visit her. I remember, also, that Theodore Tilton spent some time at our house visiting father during the Henry Ward Beecher trial, and that he wore a broad-brimmed hat over his long, dark hair.

We Starrett children were aware, I suppose, that our mother was doing things which set her off from the other mothers and wives of the community, but we were too

A PRAIRIE BOYHOOD



OUR MOTHER
Helen Ekin Starrett

young to think much about it. It was only later on that I realized that my mother, Helen Ekin Starrett, had more ability and more influence over her fellow men than all the rest of the family put together. My brothers and I grew up to build skyscrapers. She built human beings. I shall have more to say of her later on in the story.

My oldest brother, Theodore, was very clever. He was at the head of his class in school, and very early he showed a surprising skill with a pencil—a faculty inherited from

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our father. Even as a child, Theodore could draw portraits of people which really looked alive. This talent of his might have given an inkling of the future of the young Starretts, though we did not think much about it then.

In the late seventies, when our family affairs came to a crisis, mother wrote to the editor of the *St. Louis Dispatch*, who had expressed an interest in her writing, and asked for employment. She got it. She packed up and set off for St. Louis, taking along with her my youngest brother, Bill, a babe in arms. She worked in St. Louis for a year or more, sending home money every month.

In her absence, an aunt, my father's sister, looked after our house. Father went to a law office every day and we youngsters more or less ran wild. I do not think it did us any particular harm. Sometimes, when we got into some particularly outrageous scrape, authority cracked down on us in the shape of a licking.

Suddenly, mother came home from St. Louis. A man named Pulitzer had bought the *St. Louis Dispatch*. One of his first acts was to fire Mrs. Starrett. He had no use for women on a newspaper.

This event turned out to have a decisive effect on our future. While in St. Louis, mother had planned to start a magazine. Now, having lost her newspaper job, she resolved to dare everything and put her plan into action. Furthermore, she decided that not St. Louis or Kansas City, but Chicago, the metropolis of the West, was the place to launch her enterprise. "We're going to Chicago!"

A PRAIRIE BOYHOOD

ran thrillingly through the house. We packed, all excited.

I was too young then to wonder at the courage of my mother, deciding to go to Chicago from that little town, without capital, and start a magazine. Now, when I think of it, I am filled with amazement.

Father had a friend who owned a furnished house in Highland Park, a suburb about twenty-five miles north of Chicago. The house was standing empty and he offered it to the Starrett family rent free.

So we took our first railroad journey—to the city which was to fix our career. I remember a long, sleepy ride in chair cars, with mother looking out of the window and saying: “I can always tell Chicago by the masts and the ships in the river.” It seems strange today to think of identifying Chicago by masts and ships, when the Chicago River with its mastless barges is almost completely hidden by towering skyscrapers.

Highland Park was excitingly different from Kansas. For one thing, our house was larger and more handsomely furnished than any I had ever seen before. Every morning, father and mother went on an early train to the magazine office in the city. Our aunt kept house and Theodore, Ralph, and I went to school, or supposedly did so.

Theodore was keen at his studies, I was moderately interested, and Ralph hated school. I remember that at one time it was discovered that Ralph had played hooky three-fourths of the year. When Theodore and I had finished the Highland Park school, mother started us in at the Lake

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Forest Academy, six miles north. We had rooms in the old dormitory on the college grounds. We would walk the six miles up on Monday morning and back Friday night. After we finished our studies at the Academy, we entered Lake Forest University.

How mother raised money for our education I don't know. I don't believe the *Western Magazine*, as the publication was called, ever brought much profit. It was about the size of the *Literary Digest*, of present days, and she and father wrote most of its contents. It sold for a dollar a year. They had several agents out getting subscriptions on commission. They ran the circulation up to a considerable figure. It might be supposed that this would mean a good income, but for some reason it didn't. I believe that at one time the star salesman skipped out with a lot of cash.

Father's health, which had been getting worse, now failed entirely. We boys held a confab. Theodore was about to graduate from Lake Forest, but old Dr. Gregory, the president, said he couldn't get a diploma until he made up a biblical course which he had flunked. Theodore decided to use that as an excuse to quit school and go to work. Ralph and I decided to quit, also, and we did. Theodore was eighteen, I was sixteen, Ralph was fourteen. That was the last of school for the three of us.

We all got jobs in Chicago.

II · EARLY LIFE IN CHICAGO

CHICAGO has always been a thrilling city to me, both because of its tremendous vitality and because it gave me my start. In the early eighties, when I got my first job there, Chicago was like a young giant bursting his clothes. Shining lines of railroad steel were reaching out through the far Northwest and the Southwest, linking prairie, mountain, valley, ranch, and mine with the East. These lines converged at Chicago, and a tremendous trade in manufactured goods began to flow through the city westward, while the products of the West—wheat, corn, beef—poured back into Chicago. It was the fastest growing city in the United States. Yet, at the same time, it was a strange mixture of city and village. New brick and stone buildings were going up beside tumble-down shacks. Street pavements of Belgian blocks would lead on to brick roadways, and these, in turn, to common dirt roads, as the street extended farther away from the center of the city. Steam and sailing craft crowded the river front.

I have thought many times of the accidents which start

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men in their careers. A boy answers an ad, gets a job, sticks to it by a kind of inertia, though it may have no relation to his tastes or talents. My first job was in a wholesale hardware house on Lake Street—as stockboy at \$4 a week. Ralph got a job in another hardware store at the same pay. The point is that if I had happened to have a generous boss, who put me ahead rapidly, I might have been a hardware man all my life.

Theodore, my older brother, was the only one of us who early showed any decided bent. Mother took some of his sketches to a neighbor named Boyington, the architect who had designed the Palmer House. Boyington agreed to take Theodore on as an apprentice. At the end of six months he would begin to draw pay, if he made good. The payless period was a trial, as Theodore had hoped to begin putting money into the family budget at once, but the chance seemed too good to pass by. As it turned out, this decision of the oldest of us five boys to go into an architect's office had a decisive effect upon the careers of all of us.

Ralph and I had to be at work at seven in the morning. This meant that we had to tumble out of bed before daylight, bolt breakfast, grab our lunches, and run three-quarters of a mile to the 5:45 train. Sometimes we had to plow through three feet of snow. Unluckily for us, the train service from Highland Park to the city didn't time with our working hours. The 5:45 got me downtown too soon, but the next train landed me at the store at ten min-

EARLY LIFE IN CHICAGO

utes after seven, and that wouldn't do. The manager said that, if I wanted the job, I had to be there on the dot of seven. We worked till six and got home well after seven at night. Commutation cost us \$7.45 a month, so you see what a magnificent sum was left to contribute to the Starrrett exchequer.

The hardware establishment was a fifty-foot building, one hundred feet deep, with an old, rickety freight elevator at the back. The upper floors were full of merchandise. My job as stockboy was to take order sheets that came in each morning from the men on the road, go up into the warehouse and get out orders of coal hods, stove pipe elbows, stove bolts, grates, and sheets of zinc, bring them down, and lay them out to be checked by the head stockman before shipment. Zinc came in big rolls with sharp edges. I had to unroll these sheets and managed to cut my fingers at least once a day on the jagged, poisonous edges. The cuts would fester and my hands were a sight.

One morning, the manager said to me:

"Paul, every morning when you get in, I want you to dust off the shelves all around the store before you start getting out orders."

"Yes, sir," I said, but I did not like it. There was a lot of competition among us order clerks to see who could get out the most orders, and dusting the shelves handicapped me.

Some days later, the manager grumbled: "Look here,

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Paul, you're getting behind the other boys in your orders. What's the matter?"

"Well, Mr. Crane," I said, "if I have to spend three-quarters of an hour every morning dusting shelves, how can I keep up with the other fellows?" Crane had no answer to that, but he didn't let me off from dusting, and so I kept falling behind.

At the end of six months, I went to Mr. Alling, a member of the firm, and asked him for a raise in wages. Mr. Alling looked at me in amazement. "A raise?" he said. "Yes, sir," I said. "I'm working over ten hours a day for \$4 a week."

"Why, Paul," he said, "you don't know how lucky you are. When I was your age, I got down to the store at six, not seven, I opened it up, scrubbed the floors, cleaned out the spittoons, and look at me now!"

I looked at him, and then and there I decided that if that was the way to get where he was, I didn't want to get there.

"All right, Mr. Alling," I said, "I'm quitting."

That was the end of my career as a hardware man.

Up in Highland Park there was an old gentleman named Soule who ran a boys' school. One of his sons, Charles, who was general agent for the Penn Mutual Life Insurance Company, offered me a job. So I entered the life insurance business as an office boy, with the same wages I had been getting in the hardware store. My hours were shorter and the work easier. I took care of the mail

and sent out pamphlets. There was another difference, not so pleasing. At the hardware store, I got my pay every week. At the insurance office, some weeks I got it, some weeks I didn't.

I was just about deciding to look for another job, when one of the agents suggested that I might become a solicitor. This was the only way to make any money in insurance, he said. He coached me in ways of approaching a prospect and gave me a list of businessmen to canvas. I was anxious to make money, all right, but I was naturally timid about asking strangers for anything, and besides almost all office buildings displayed this sign downstairs: "Beggars, Peddlers, and Insurance Solicitors Not Allowed in This Building."

Finally, I started out. It took all my courage to push past that warning, which put me in the class with beggars and peddlers. When I got upstairs, I would walk up and down the corridor, working up courage enough to open my prospect's door.

If I was told that my man wasn't in, I felt relieved, like a person who gets word that a dental appointment has been postponed. Now and then somebody took pity on me and listened. But I didn't get any applications. I suppose it was difficult for anybody to take a stammering kid of eighteen seriously as an insurance salesman.

Finally, I did sell a policy. It was to a lawyer named Leonard, son-in-law of a rich old gentleman who was a controlling factor in the Goodrich Steamship Line. Leon-

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ard signed an application for a five thousand dollar policy. I rushed back to the office and everybody congratulated me. If the application, which we sent to the Philadelphia office for approval, was accepted, I would get a commission of about \$80. While I waited, I went out with renewed energy and got four or five other prospects interested. Now I felt sure that I was on the road to success. The policy came back approved. I went over to deliver it and collect the premium.

"Mr. Leonard is out," the clerk said. "When is he coming back?" "He isn't coming back," said the clerk, with a queer look. That was true. He wasn't coming back. Leonard had absconded, the day before.

I turned and went out of the building, sick at heart. When I broke the news in the office one of the solicitors said sarcastically: "Tried to insure a crook, did you?" The other men were sympathetic, but my interest was gone. Such failure was tragic to a boy of eighteen.

I walked out of that office and never went back.

So ended my career as an insurance man.

What was the matter with me? Was this sort of thing going to happen again and again? When was I going to get started in something? I talked it over with mother. The trouble was, she thought, that I didn't have the training to qualify me for decent wages. The next day after I quitted the insurance office, I started studying stenography at a business college downtown.

EARLY LIFE IN CHICAGO

About this time, mother gave up her magazine, after a long, hopeless struggle; and she was laying plans to start a girls' school in Kenwood. So the family moved to the South Sidé. Father's health grew steadily worse. A short time after we moved, he went to Missouri in connection with some deal in lead mines. When he came home, he was taken down with pneumonia and died suddenly. This was a terrible blow to all of us.

For three months I worked like a beaver at stenography. Then I obtained a job with a paint company on the West Side. I had a long trolley ride, then a two-mile walk to the plant. This seemed a frightful loss of time, and after a month I found a chance to go with a grain commission house downtown as stenographer and settling clerk. I earned \$10 a week, of which \$5 was deducted to pay for my typewriter, which was supplied by the firm. The machine cost \$100. At the end of two years my salary was \$12.50 a week.

My mornings were occupied as a settling clerk; after the Exchange closed at three o'clock, I wrote letters to our customers.

New buildings were going up all over, downtown. In the noon hours, I would go out and watch the men working on them, especially a building called the Rookery. The building had been designed by a vigorous young firm of architects, Burnham & Root, and Theodore was now working for them.

The Rookery Building was the wonder of the city and

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was a factor in establishing both the architects, Burnham & Root, and the contractors, the George A. Fuller Company, as leading men in the building business. For instance, no contractor before that had dreamed of trying to carry on foundation work in rainy or snowy weather, but the Fuller Company had put a tar-paper roof over the whole site and was pushing ahead, regardless of weather. I suppose I ought to say that, as a future builder of skyscrapers, I was thrilled by the operation, and right there decided on my future career. This would sound well, but it isn't true. My ambition then was to get ahead in any way I could legitimately and earn my living. I didn't dream of becoming a builder.

One day, my mother called on my employer and inquired how I was progressing. Mr. Nelson, whose bearing was most imposing and who looked something like Bismarck, replied, "Very well, Mrs. Starrett, but your son will never amount to much. He is too diffident."

I had hoped that my experience in trying to sell life insurance had knocked some of my timidity out of me, and I really think it had; but here I was, twenty-two years old, getting \$12.50 a week, and here was my boss stating flatly that I was too diffident ever to amount to much! The future didn't look any too rosy to me. True enough, \$12.50 was more in the late eighties than it is now. But it wasn't a fortune. How could a man get married and have a family on that?

Years later, when Mr. Nelson had lost most of his

EARLY LIFE IN CHICAGO



MONADNOCK BUILDING

Burnham & Root, architects

The last skyscraper built with structural masonry walls

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money and had retired, he called on me one day. He spoke of the vicissitudes of life and the impossibility of predicting anyone's future, concluding with "Who would ever have thought you would succeed as you have?" I replied, "I remember, Mr. Nelson, you once told my mother I would never amount to much, I was too diffident. I think that was one of the things which spurred me on."

As time went on, my working hours kept getting longer and longer. One day, when I was out on an errand, an icy blast off Lake Michigan gave me a bad chill. I went home to a serious illness. During the days in bed, I thought hard about my future. When I returned to the office, I asked my employer for a raise in salary.

Mr. Nelson gazed at me in much the same astonishment that the hardware magnate had shown when I put the same request to him.

"Why, Paul," he said, "I can get dozens of young fellows to do the work you are doing for less than I pay you!" Then he scrutinized me more closely. "Boy, you don't look very husky. You're all skin and bone. Why don't you go out to my ranch in New Mexico and build up? I can make a job for you out there—ranch clerk. No pay, but you'll get your board and keep and a horse to ride."

Well, I went.

I sold my typewriter to my successor for more than enough to pay my railroad fare, and a few days later I landed in the desert.

The ranch lay sixteen miles from the railroad station

EARLY LIFE IN CHICAGO

at Springer, about forty miles north of Las Vegas. Here, at the end of my train journey, I was to wait overnight for a team from the ranch. My arrival was not auspicious. Across from the depot was the hotel, the "Montezuma House." The proprietor was drunk. He looked like the pictures of the villains in the dime novels of that period. His name was Brownrigg. He had a large, fat wife with the disposition of a wildcat. During the afternoon, Brownrigg and his wife quarreled, he throwing empty beer bottles at her as she taunted him from the door of their apartment. As a bottle struck, the lady would quickly shut the door. This domestic interlude did not cheer me, and already I felt—in addition to low spirits from my ill health—a bit homesick.

Beyond Springer lay the snow-capped mountains with their green forests, toward which I cast longing eyes. Perhaps something of my nostalgia betrayed itself, for Brownrigg and his wife, reconciling their differences, now adopted a parental attitude that I found even more distasteful.

The drive to the ranch, the next day, was pleasant, the beautiful foothills always on the horizon, and everywhere the lovely brown country with a little fuzzy grass—buffalo grass—straggling halfheartedly.

The ranch house was a comfortable one. I found life there a perpetual fascination. For seven months I rode the range, hunted antelope and mountain lion, without success, kept ranch books, drowsed in the sun. I gained

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twenty-five pounds, built bone and muscle. I realized afterward that I had narrowly escaped tuberculosis. Those seven months on the ranch gave me a constitution that stood me well for many years.

The country had been eaten off by being overstocked with cattle and could no longer support large herds, which in earlier days had been turned loose for grazing before being shipped to market. In previous years this had been a great business and fortunes had been made, but now sheepmen were beginning to encroach. Sheep grazed upon much shorter grass than cattle, and their appearance stirred fierce animosity. I attended two or three meetings of angry ranchers who gathered at roundups to debate the situation. A form of warfare broke out, and every few weeks rumors would drift to us of some cattleman having killed a sheep herder.

There was animosity in the very dryness of the country. During my seven months on the ranch there was no rainfall. We had only one light snowstorm, which lasted not more than an hour. The tally sheets of our company, the Palo Blanco Cattle Company, called for 40,000 head of cattle. The foreman of the ranch told me he doubted if 1,000 cattle could be found alive. I could readily believe this, when riding over the range.

There were about 150 idle horses on the ranch. During my off times I rode round the country with the cowboys, who were generally splendid fellows.



PAUL STARRETT AND COWBOYS, NEW MEXICO

On these rides, we frequently encountered herds of wild antelope, exceptionally fleet. The cowboys would close in on them, on either flank, riding fast and shooting their Winchesters from the hip with astonishing success, for the antelope could travel with the speed of an express train. I did not share their skill. Firing a Winchester with one hand while racing across the prairie was too much for me. Not once did my shots take effect.

It was another matter with the marauding mountain lions; they were fair game. Clinton Spencer, a friend from home, had joined me, and we determined on a hunting expedition in the hills toward Raton. A cowboy went along with us, as guide and cook.

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The first night out, we paused at a range cabin and found a band of cowpunchers, who asked us to share the place with them. The walls of the cabin were hung with coyote and mountain-lion skins and there were fur rugs on the floor. After supper, there was a call for "Bill." He rose and, in a beautiful voice with a pronounced southern drawl, treated us to the evening's entertainment, a recitation from beginning to end of Scott's *Lady of the Lake*. The scene remains with me, the cowboys sprawled around him, silent and attentive, in the flickering light of the fire.

Not long after I arrived in New Mexico, my brother Theodore sent me a drafting board and instruments, with a lot of old plans, together with instructions in preparing myself for a job in Burnham & Root's office which he hoped to get for me. I had never had a better time than on the ranch. My health was entirely recovered. I had no ambition beyond this pleasant, interesting life I was leading, and should have been perfectly content to spend the rest of my days wandering around with the cowboys. Perhaps my family feared just this; for soon Theodore wrote that I could get a job with Burnham & Root if I came at once. In 1888 I went back to Chicago.

Though I did not know it, I was then starting on the way to my career as a builder of skyscrapers.

DANIEL HUDSON BURNHAM was one of the handsomest men I ever saw. He had a beautifully molded head, a great crown of dark-brown hair that curved low over his broad forehead, a thick, reddish mustache above his powerful jaw, a quick, direct glance out of his deep-blue eyes. He had a magnetic personality. That, combined with his magnificent physique, was a big factor in his success. It was easy to see how he got commissions. His very bearing and looks were half the battle. He had only to assert the most commonplace thing and it sounded important and convincing.

Born in the East, he had gone out to Nevada after flunking the entrance examinations for both Harvard and Yale. He had been a prospector in Virginia City in the rowdy days when Mark Twain was a reporter on the *Territorial Enterprise*. After trying his luck in various schemes out there, he had landed back in Chicago on a cattle car. He found a job as draftsman in an architect's office, caught the hang of the thing rapidly, soon branched out for him-

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self. He made a ten-strike by getting the commission to design a \$60,000 house for a wealthy Chicago man named Sherman and, in real story-book style, married Sherman's daughter.

Burnham was clever in his choice of associates. His picking of John Wellborn Root as his partner was a stroke of genius. Root, of medium height, plump, blond, with flashing blue eyes, was the real architect of the firm, and Burnham knew it and recognized it. Burnham was the salesman. The two made a perfect team.

This period—at the time when I came back from New Mexico and went to work for the firm—was just the beginning of the era of great expansion in American business—the era of combinations and mergers, the branching-out of industry and merchandising. Chicago seemed to be the center of activity. There was a spirit of growth, stir, push—an eagerness to go in for bigger, higher buildings. Burnham saw the temper of the time and seized on it to his advantage, as no other architect had done, at least in the Middle West.

All this I understood later, when I got a perspective on Burnham and the events centering round him.

For the moment, my eye was glued to my drafting board, with now and then a glance at "Uncle Dan" or Root as they passed through the drafting room. I was a helper. After a draftsman had finished a drawing, a transparent sheet of linen was laid over it and one of my duties



DANIEL H. BURNHAM

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was to make a tracing in ink. Then this tracing was used for making blueprints. I did stenographic work, too.

By degrees, I got into regular drafting. Now and then, Theodore would come around to see how I was getting on. Most of the time, he was out of the office, superintending. The superintendent is an important man in an architect's organization. He is the man who watches the contractor to see that he does the work according to specifications. He interprets the architect's drawings to the builder. If the builder runs into difficulties in carrying out some provision of the plans and wants to modify them, the superintendent takes the matter up with his office. He is the liaison officer between builder and architect. He looks after the interests of both. The fact that Theodore at twenty-five had been put into such responsibility shows how fully he had won Burnham's confidence.

At about this time, Burnham & Root had the Rand McNally building in the office and the plans were being changed constantly. There was in the office a young man named Jim Dinwiddie, who had been Theodore's assistant, and he had the job of making the changes in this building, shifting the columns in the interior, in fact, rearranging the whole inside. I was put to helping Dinwiddie. In this way I learned fast.

Men in the office found that if they had a tiresome piece of drawing to do, they could shove it off on me and I would do it for the experience. This helped me a lot.

The office was full of a rush of work, but the spirit of

the place was delightfully free and easy and human in comparison with the other offices I had worked in. Burnham believed that a certain amount of physical exercise was necessary to keep a man's wits sharpened. He had a gymnasium fitted up in one corner of the office and during the noon hour and after hours those so inclined would go out and put on the gloves, play handball, or fence with the foils. Occasionally, Burnham would join us and give us lessons in fencing.

Root not only was a fine architect but was an accomplished musician and had the reputation of being one of the finest after-dinner speakers in Chicago. On one occasion he had a piano moved into the office and gave a concert. The son of a southern merchant, he had been smuggled out of North Carolina on a blockade-runner during the Civil War; sailing under the guns of the Federal fleet, he had escaped and gone to school in England.

Suddenly, to my surprise, shortly after I came back from New Mexico, my brother resigned from Burnham & Root's and announced that he was going into the contracting business. Possibly he had realized, while working as Burnham's representative, that contracting was more to his liking and more in the line of his ability than was designing, and that there was more money in it. I am not sure. He kept his own counsel.

Left on my own in the office, I determined more firmly than ever to make good. The deeper I got into the work, the more I liked it. I felt that at last I was started in an occupa-

tion that would take me somewhere. To be a man like Burnham or Root, who conjured a building out of sheer imagination, suddenly seemed to me the most wonderful and desirable thing in the world. I got books on architecture out of the library and pored over them after hours. I tried my hand at sketching imaginary buildings. The results were pitiful. I couldn't imagine anything. I could copy, but I couldn't imagine. My mind was absolutely literal and matter of fact. I would have been discouraged except for one thing, a very important thing. This was that my mind began to turn more and more to the practical machinery of architecture. That is, the process by which an architect's drawing is transformed into a practical reality. I had been good at mathematics in school, and I found now that I had a knack at working out the engineering side of a building—the foundations, strength of materials, details of the columns and beams, and so on. This was lucky for me, because the skyscraper made all these things of first importance in an architect's office, and the skyscraper was being born right there in Chicago, just as I started under Burnham.

There is no mystery about the origin of the skyscraper. It was merely the application of common sense.

A wall of brick or stone must be thickened at the base in proportion to its height. If it carries other weight, like the weight of floors, it must be thickened still more to give it the proper bearing strength. Men had built high buildings before the skyscraper—many Renaissance cathedrals

are as tall as thirty-story office buildings, but look at the tremendous thickness of the walls at the bottom and the flying buttresses that prop them up.

As our cities grew larger, land values and taxes multiplied in the downtown section and property owners were driven in self-defense to look for more revenue from their holdings. Furthermore, for the sake of efficiency, it was desirable to concentrate as many offices as possible in the central part of the city. Owners built higher buildings. But when they got up to six stories, they had to stop, because middle-aged men couldn't climb more than five flights of stairs without heart failure. The elevator had begun to be put into use about the time I was born, just after the Civil War. Soon, buildings were shoved up to ten stories or more. Then came another halt, because the bottom walls had to be made so thick that they occupied valuable area at the ground level, where lighted space provided the greatest rentals.

The constant aim was to reduce the size of walls and the weights imposed on the foundations. First, cast-iron columns were introduced in the outside piers, to carry the floor loads. Cast-iron columns were used also in the interior, with joists and girders connecting them, of wrought-iron "I" beams. Hollow-tile floor arches were used for filling, instead of the old segmental brick arch. All these changes tended to reduce the weight and lighten the appearance of the structure. Shortly thereafter, with the de-

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velopment of the Bessemer steel process, steel was substituted for both columns and floor beams.

The idea of a metal framework for buildings had been in the air for years. In the middle of the nineteenth century, that amazing French genius, Viollet-le-Duc, archeologist and dreamer, had suggested it, and about 1880 a young architect in Minneapolis, named Buffington, took hold of the Frenchman's suggestion and actually made sketches for metal-frame buildings running to fifty and a hundred stories. Buffington neglected to secure patents on the idea, nor had he obtained financial backing to erect any such structures. By the time he did get around to apply for patents, Jenney had already put the idea into reality, so that Buffington had very little basis for a patent suit.

About this time Jenney, the architect in whose office both Burnham and Root had had much of their training, designed the ten-story Chicago office building for the Home Insurance Company of New York. Into his design for this building Jenney put the cast-iron column-and-beam system described above. For the first time, the outer walls carried only themselves, nothing else, and therefore could be scaled down in thickness considerably. This building has enjoyed the reputation of being the first of the cage type. It was followed, shortly after, by Holabird & Roche with their Tacoma Building, where for the first time the masonry covering the outside walls themselves was actually carried on beams, transferring the entire load to the columns. This was the first true skyscraper in the

modern sense. The steel framework on the street fronts supported the *entire structure, outer walls and all*. Instead of having the outer walls support themselves from the foundation up, as had always been done, the architects fastened shelves around the framework on the outside at each floor level and the terra cotta and brick walls were hung on these shelves and anchored to the frame. The outer wall was merely a skin, no thicker at the bottom than at the top. This is a very ordinary idea today. In the history of building, it was revolutionary. But sometimes you have to get a perspective on a revolution to realize that it was one. As I look back, I can't remember that the Tacoma Building excited any special comment. It was merely the logical conclusion toward which the wide-awake architects of Chicago had been moving, pushed by necessity and led by opportunity.

As I have said, the entrance of iron and steel into building construction brought the engineering side of the office work into great importance and made me feel that I really had a role in the play. I found that calculating the strength of columns and beams in a steel frame was fascinating. As the steel frame came into use, it was the custom of architects to have their draftsmen figure the size of the different steel members from the handbooks put out by the various steel companies. Inevitably, this resulted in a lot of amateurish engineering. We had the Midland Hotel in Kansas City, and one morning the news flashed to the office that the whole building had fallen down. Everybody

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was in consternation. Burnham rushed out to Kansas City, while we waited apprehensively for further news. As it turned out, the disaster was not so bad as it might have been, but it was bad enough. Several of the beams supporting the roof of the great dining room on the top floor had crushed the masonry pier supporting them and fallen to the floor below.

Burnham realized that his engineering was faulty, and soon afterward he hired a brilliant young bridge engineer, named Shankland, to design the steelwork of his buildings. Shankland, when he came to us, had just finished a survey of certain railroad bridges in the Far West, to determine whether they were capable of carrying the bigger locomotives and heavier trains that were coming into use with the growth of Western traffic.

Shankland was a splendid fellow and he and I became friends. He proposed that we exchange lessons—I to teach him the architecture I knew, he to teach me engineering. This was a lucky break for me, because Shankland knew his stuff and knew how to teach it. He would coach me on safe loads per square inch of steel, the weight a column could bear, the ratio of its strength to its length, and so on.

In the noon hours, I would dash out and snatch a ten- or fifteen-cent lunch at one of the eating places run by H. H. Kohlsaat—at that time known only as the proprietor of bakeries and eating places, but later nationally famous as owner and editor of the *Chicago Record Herald* and *Evening Post*—then I would hustle around to some building,

preferably one designed by our office, and there I would poke my nose into everything.

I made friends with foremen, got information on mixing concrete and mortar, laying brick, setting foundations. I studied details of window frames, methods of waterproofing, hoists, riveting, flooring, plastering, plumbing. From the electrical engineer I found out how to estimate the size of a dynamo, how to install lights, how to figure the number of lights that could be carried on a certain sized wire, what sized boiler was needed to run the dynamos, operate the elevators, and heat the building. I studied radiation and the size of pipes required to carry steam to the radiators. These things I jotted down on scraps of paper. I stayed at the office after hours copying them all into a notebook.

It was an odd fact that Chicago, where the skyscraper had its birth, offered a troublesome, often precarious, support for large buildings. The city was built on gumbo—a stiff clay, something like cheese. This stuff “gives” when a heavy weight is put on it. It was the custom in Chicago to set a building four or five inches above the level of the sidewalk and slant the sidewalk up from the curb, anticipating that settlement would eventually bring the building to its desired level. Sometimes it did, sometimes it didn’t. Sometimes it settled too much. In the case of the new Auditorium, the tower sank fourteen inches! Sometimes one part of a building sank more than another part, putting the whole structure out of true. This was particularly so

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if an older building had stood on only a part of the lot. The new building, covering the whole plot, would settle much more in the rear, where there had been no building and, therefore, no compression of the gumbo. I remember that the Masonic Temple settled five or six inches more in the rear than along the street.

To counteract this settling, architects devised methods of spreading the foundations, to give more bearing on the gumbo. Under each pier or column, they put a crisscross of old railroad iron, embedded in concrete, tapering toward the top like a pyramid. At the Montauk Building, designed by our office, these pyramids entirely filled the basement, so that engines and boilers had to be set in the rear, at street level.

Chicago builders did ultimately find a way to reach hardpan. At the time I am speaking of, foundation men knew no way of fighting seepage when they tried to dig down through the gumbo. A little later, they worked out a scheme of driving down a circle of wooden staves, then digging out inside the staves, driving another set of staves deeper and again digging out the gumbo, really driving down a well, till they reached hardpan or rock at sixty or seventy-five feet. Then the cylindrical well was filled with concrete, making a solid concrete column. This caisson method is very common today, of course.

Naturally a lot of space in my notebook was taken up with the subject of foundations.

While Burnham had shown a friendly interest in me,

I was not sure that he gave me any particular consideration. Therefore, I was pleased when one day he paused beside my drafting board and said:

“Paul, your brother left me just when he was becoming a valuable man. I don’t want you to work along and become valuable and then quit me. I want you to make a three-year contract with me.”

“Mr. Burnham, that would please me very much.”

“Here’s the contract,” said Mr. Burnham.

My heart went up, then down. The document called for a salary of \$7.50 a week for the first year (exactly what I was then getting), \$10 for the second year, \$12.50 for the third year.

I tried to protest against this skimpy pay, but Burnham’s handsome presence, his imperial manner, the physical effect of his nearness, choked the words in my throat.

“All right, I accept,” I said.

I signed. Anyhow, it would pay my board.

Ralph had left the bank where he had been working and had gone with Theodore. My two younger brothers, Goldwin and Bill, were in school; Katharine was in Vassar; Helen, helping mother in her school. My mother’s school was a success, in point of attendance, but mother was too generous ever to get very far ahead financially. Her house during vacation time was always full of hapless folk whom she had taken under her roof out of the goodness of her heart. But it was a happy household and

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now that several of us were getting started and beginning to pay mother back a little of what we owed her—as far as that could be paid in money—we Starretts seemed more than ever a unity against the world. One thing that bound us together was our common love of music. Each of us played some instrument more or less well, and we organized a family orchestra. We played together in harmony, if not always with harmony. Goldwin became a really expert musician.

After I had worked two years on my contract with Burnham and was starting on the third, I got up my nerve one day and said: “Mr. Burnham, I think I’m worth more than twelve-fifty a week.”

Burnham looked at me, stroking his handsome mustache. I wondered whether he was going to give me the same answer as the hardware man and the commission merchant when I struck them for a raise.

“What do you think you are worth?” asked Burnham.

“At least twice what I’m getting—twenty-five a week!”

“Well, I think you’re right. I’ll tell the bookkeeper.”

The big reason why I wanted more money was that I knew a girl who, I hoped, would be my wife. Her name was Therese Hinman. She was the daughter of one of the men who had befriended me at the Penn Mutual Life Insurance office. That’s one thing my life insurance adventure brought me. The Hinmans lived on the South Side, not far from us. When I got home from work, I would change my clothes, brush my teeth, comb my hair, and go

over to see Miss Hinman. In the summer, I took her to the Theodore Thomas concerts, held in a big barn-like place down on the lake front, near where the Art Institute now stands. She was fond of music, just as I was.

Often I spent my evenings in the office working on my notes. One night about seven, when I was bent over my drawing board, Burnham walked in. He came over to my stall. "What are you doing, Paul?"

"Making notes," I said. I handed him my notebook.

He glanced through it casually.

"Well, well," he said. He put the book down and looked at me intently. "Paul, let me give you some advice. This note taking about concrete and steel and window frames is all very well, but don't you know that you can hire any number of civil engineers, mechanical engineers, and electrical engineers, who will be absolutely contented to spend their whole lives in doing routine?"

"You Starrett boys are different. You have a genius for organization and leadership. My advice to you is to drop all this note taking. Study the organization side of the business."

I had never realized that I possessed a genius for organization and leadership. But maybe I did. If the great Burnham said so, it must be so.

From that moment, I never took another note.

Yet all that close attention to detail, all that study of the brick and mortar of the job, was tremendously valuable to me afterward. When I talked to men on the job, I

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talked their language. I had the actual facts of building at my tongue's end—a million facts, every angle and joint of a building from foundation to roof. And I had begun to be aware of something else, even more valuable. For want of a better term, I'll call it the constructive instinct. It isn't something that can be taught or consciously learned. It is born in you. You can know all the formulas in the world, but in building you must have an instinct for what will work and what will not.

OUT of these years with Burnham rises one gleaming event whose image can never grow dim. The World's Columbian Exposition! The Exposition was the great happening for all my generation in the Middle West, but for me it had a special, personal meaning. The skyscraper had been born in half a dozen architects' offices in Chicago in those years; the World's Columbian Exposition, the City of Magic, was born in one office—our office. You can imagine what excitement it meant for a young man in his twenties, just becoming fascinated by the art of building, to realize that the Fair was taking shape and direction under command of the man whom I admired more than anyone else in the world, the man whom I desired more than anything else in the world to emulate.

Besides this, the Fair brought me a new job, a step onward toward my career as a builder.

After a short period of shifting responsibilities and buck passing, the management of the construction of the

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Fair gravitated to Mr. Burnham, the ablest man in the organization.

Burnham invited a group of distinguished architects to come to Chicago. At a dinner he gave for them, he made a magnificent speech in which he declared that the Columbian Exposition was the third great crisis in American history, and that, just as 1776 and 1861 had demanded self-sacrifice from all citizens, so now the hour demanded that everyone come forward and give himself to the common cause. We underlings at the office weren't at the dinner, but we knew all about what happened, and we were just as excited as if we had been there—yes, more so, because this was our own boss, our Uncle Dan, who brought the big Eastern men to their feet, cheering.

Burnham & Root laid out the general plan of the Fair, Root probably contributing more to it than Burnham. I remember that Root came into the office one day and said: "Here, Dan, is the plan we ought to adopt." This was the "shirt plan," as we called it, incorporating the whole magnificent Court of Honor. Then Burnham, with Root's approval, gave out the buildings to different architects—the Manufacturers Building to George B. Post, the Agricultural Building to McKim, Mead & White, the Transportation Building to Adler & Sullivan, and so on.

In the midst of the stir of preparation came tragedy.

One Saturday afternoon I went to the office to work, expecting to find no one there. Into the elevator with me



COURT OF HONOR, 1893

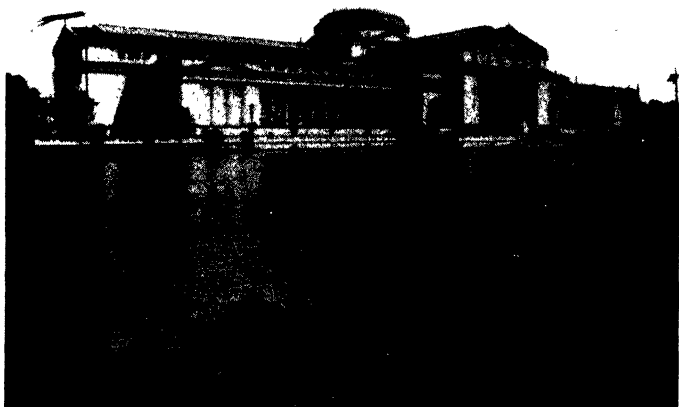
stepped Mr. Root, looking ill. Three days later, he was dead of pneumonia.

The death of Root was a terrific blow to Burnham, both personally and professionally. He loved Root, depended on him in a thousand ways. It is probable that Burnham would have reached greater heights afterward, had his brilliant partner lived.

To replace Root as superintendent of layout for the Exposition, Burnham chose Charles B. Atwood, celebrated New York architect. Atwood came to Chicago, designed the Fine Arts Building, assumed the general work of beautifying the Fair. Burnham put me under Atwood, so I gained a new insight into the relationship of designing and building.

The national business depression of the early nineties

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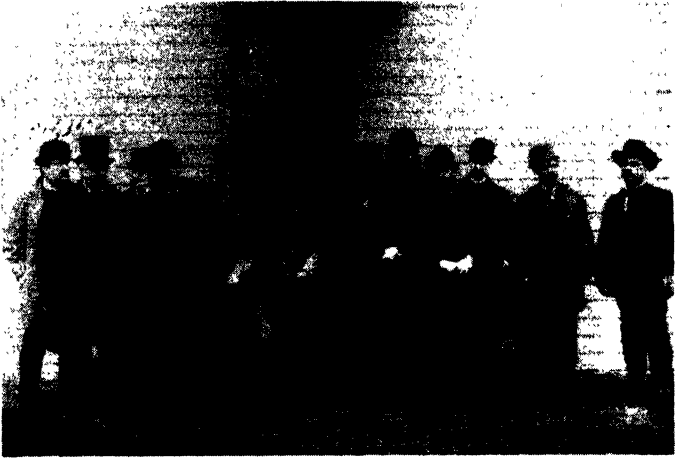


(C. D. Abhold)

FINE ARTS BUILDING, 1893

struck Chicago, and commercial building came almost to a standstill. Burnham moved his whole office force out to the Exposition grounds, which had been a swamp where Hyde Park boys skated in winter.

Then came a surprise—a new job for me, a gratifying responsibility. Burnham made me superintendent on two buildings, Machinery Hall and the Mines and Mining Building. A Western builder had secured the contract on Machinery Hall and his superintendent was a bright young chap named Walter Clough. I discovered that Clough had come from Leavenworth, only thirty miles from my own birthplace. At seventeen, Clough had been timekeeper for a Leavenworth contractor. His boss got him a chance to go into Burnham's office as an apprentice without pay. He



WORLD'S FAIR GROUP, 1893

had worked six months in the office, a year before I went there, doing some of the same work that I did later. Then he went back West. Now he was again in Chicago on a really important undertaking. I got along so well with Clough that I gained entirely too favorable an idea of the relations between builder and architect. Afterward, I found out that the two are often bitterly at odds. But the experience was valuable in showing me that the two can get along well, if both are open-minded, each ready to see the other man's point of view.

As the time drew near for the Fair to open, it seemed to me that the vast sandy expanse littered with lumber and rubbish would never be cleared in time, even though the Exposition was starting a year later than had been originally planned. The day drew nearer. Frederick Law Olmstead, the Bostonian who had laid out Central Park

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in New York, had been given the job of landscaping, and at what looked like a perilously late date, Olmstead moved in with carloads of black surface soil. The soil was spread and graded, seeded with blue grass. An army of men with sprinklers set to work. In a week, the grass was up. When the Fair opened, Olmstead's lawns were the first amazement.

There are two theories about the effect on our national architecture of the Exposition of 1893.

One is that Burnham, overimpressed by the prestige of the Eastern architects, allowed them to carry too far the classical style in an artificial manner, and that the Fair implanted in the millions who came to see it a wrong idea of architecture and beauty, which would lie as a blight on our minds for a generation. That was the theory of Louis Sullivan, and from this point of view Sullivan's Transportation Building was the outstanding protest against Burnham's plan.

The other theory is that the Fair turned a people who had been thinking in purely utilitarian terms to thoughts about the beauty of things, in public buildings, office buildings, houses, furniture, gardens, lawns. Not that it developed any particular style of architecture, but taught that there was such a thing as architecture, that there was something besides mere practicability in a building.

This second is my belief.

But I remember how at the time a French writer—I think his name was Bourget—wrote that he was much

more impressed by the beauty of the Chicago skyscrapers than by the Exposition. He said that the simple power of necessity which operated in the design of Chicago's new commercial buildings was to a certain extent a principle of beauty. This statement was ridiculed and it puzzled me. I had never thought of these new things called skyscrapers as beautiful. They were designed with the strictly commercial purpose of providing more rental space, using the new steel-framework idea to give height, lightness, and airiness. No conscious effort had been made to lend them beauty.

Later on, however, as skyscrapers climbed higher and really began to scrape the sky, I remembered what the Frenchman had said and I began to see that it had much truth in it.

During the whole Fair year, the attendance was steadily satisfactory, but the peak came on Chicago Day.

The Illinois Central Railroad had a special train service to carry passengers from the city to the Fair. These trains looked like cattle cars painted yellow, with seats arranged for the greatest carrying capacity. Every train, on Chicago Day, came out with passengers crowded on the roofs and hanging on to the entrance platforms and steps. There were 746,000 paid admissions.

I have kept away from all fairs since. I felt that there would never be another to approximate the beauty of the Chicago Fair. Enthralled, I would return at night to see

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all the white buildings, the moonlight shining on the Japanese temple on the island in the lagoon, the circling gondolas, the water glimmering.

At the completion of the Exposition, we abandoned the grounds and went back to our prosaic drafting rooms.

Now I come to the events which led to my jump from architecture into building.

The year after the Fair, Burnham had a commission for a building in Buffalo. It was the Ellicott Square, and was to be the largest office building in the United States. Atwood, who had remained with Burnham after the Fair, was the actual designer. I worked under him on the plans and with Shankland on the steel designing. I went to Burnham and said: "Let me superintend this job."

He looked at me with an indulgent smile and answered: "You're too young."

Young! I looked younger than I was. I was twenty-eight years old. I had married, and I had a baby daughter. I was beginning to wonder when that remarkable power of organization and leadership which Burnham attributed to us was going to have a chance to display itself. Burnham continued to gaze at me doubtfully. I could see what was going on in his mind. I had carried off my work at the Fair successfully, but that had been under the eye of the

CHANGING THE SKYLINE

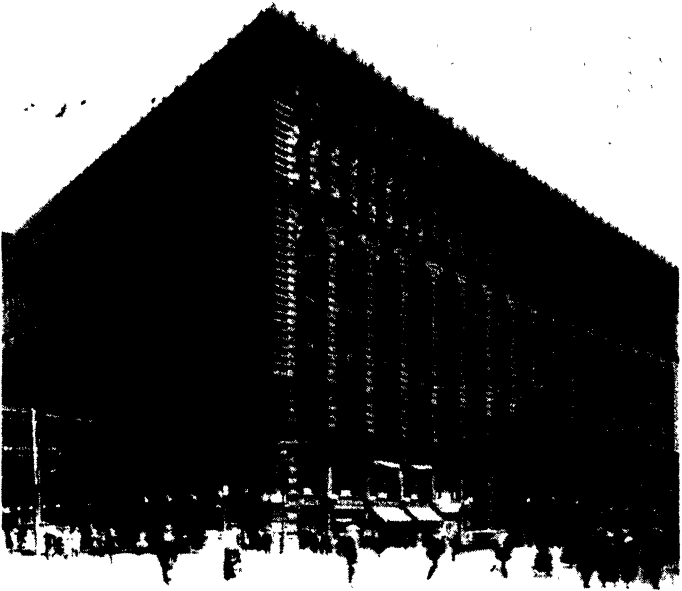
office. This was in a distant city and was to be the largest office building in America.

"Listen, Mr. Burnham," I said, "I can represent you better than these old dodoes you usually put on your jobs. Put me on it and you'll have no regrets."

He smiled. "Well," he said, "let me think it over."

I knew that one obstacle to my getting the job was Graham, Burnham's new partner. Graham and I were at outs. He was smart as a whip, but his ideas of fair dealing were so peculiar that I wondered at Burnham's confidence in him. Graham loved to see a builder lose money. He would go to almost any length to make him lose. I thought his attitude outrageous, and my quarrel with Graham on this point was important in my career because it strengthened me in certain beliefs about the relationship of builder and architect. I believed an architect should be an impartial judge and that, as a great many breaks went against the builder, the architect should not take away from him those chances which worked in his favor.

As an example, on the Illinois Trust and Savings Bank a mason contractor named George Messersmith had put in the lowest bid on the masonry and Graham was authorized to give him the job. I was in the office when Messersmith came in. "How many brick did you figure on, George?" asked Graham. George gave his figure. "Now you know, George," said Graham, "there aren't nearly as many brick in the building as that. You take off 200,000. And what did you figure on to lay these brick?" Messer-



ELLICOTT SQUARE BUILDING

Burnham & Root, architects

smith gave his figure, and Graham said, "Oh, you know you can lay them for \$2 less a thousand than that!" So he went on through all the items, cutting the figures down. "Now, George," said Graham, "we have another figure much less than yours"—this was a lie—"but we want you to do the work. All this figures up to so much, but I'll allow you \$10,000 more for good measure. If you want to take the contract for that, you can have it." Old George said: "Well, Mr. Graham, I guess you know more about it than I do. I'll take the job."

Graham turned to me and said: "Will you O.K. this?"

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"I will not," I said. "If Messersmith is bidding on this building, he ought to make his own figures."

Well, Graham went ahead anyway, and he skinned the life out of old George on that job. He didn't get anything out of it personally, either, except the satisfaction of bragging to the owners of the extraordinarily low figure.

I picture this incident because it illustrates a point of view I have encountered among certain architects all through my career and because, as I say, it helped to confirm me in my own conviction.

However, despite Graham's opposition to me, Burnham came to me a few days later and said he had decided to give me the Buffalo job. My salary would be \$3,000 a year. I had been getting \$2,400. Before I left, Graham told the bookkeeper my pay was to stay at \$2,400. The \$600 would be added only if I made good. I suppose he hoped I wouldn't.

So, with my family, I moved to Buffalo. We took two rooms in the old Millard Fillmore house, and my chief memory of that place is the narrow V-shaped tin bathtub. I often wondered how Fillmore had managed to squeeze into it. But the bathtub was the least of my troubles.

The contractor on this Buffalo job was a Chicago outfit which had agreed to put up the building for \$1,650,000, of which \$500,000 was stock. This made the builder the largest individual stockholder and he thought he could disregard the architect. Besides, the fellow was incompetent; he didn't know how to build. My belief that the

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architect should give the builder a fair break had a rude test. Often I felt like murdering the builder.

When the building was up to the eleventh floor, the owners made two important leases for the top floor, one to the Western Union Telegraph Company, one to the Ellicott Club. This meant that we had to omit interior columns at each end of the building and throw trusses across to support the roof. I sat up nights making shop drawings for these changes, ordered the new steel, and urged the builder to get it into place and the building roofed over. It was winter; bad weather threatened. The builder told me these changes were no worry of his, he would put the trusses in when he got ready. I had frequently warned the contractor of the danger of bad weather. Before the roof was in place, a storm dumped four feet of snow on the top floor. It melted, dripped down four or five floors, soaked the floor arches and ruined plastered ceilings. It looked unsightly. When we laid the floors, the maple curled up and raised. The whole place was a mess. Oh, it was repaired in the end, but I was heartsick at the time and thought Burnham might lose confidence in me. However, when the contractor went complaining to him that I had exceeded my authority, Burnham said: "I wouldn't give a damn for him if he hadn't."

The important point about this in my story is that the contractor's messing up of his job awakened in me the idea of becoming a builder. He did his work so badly that my hands itched to take it over and do it myself. It irked me

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to be merely a checker on the man who did the work. I had become convinced that I didn't have it in me to be an architect, in the sense of a designer, at any rate, and the next best thing—indeed, in some ways a bigger thing—was to be the fellow who put the architect's dream into steel and stone.

My chance didn't come quite yet. Something happened, however, that gave me assurance that I was advancing toward success. When the work was going on quite rapidly in its earlier stages, Burnham decided to take a trip to Europe. He stopped at Buffalo and joined the owners at a meeting. At luncheon in the Buffalo Club, various problems were discussed; then the president of the company asked me to retire, as they wished to confer with Mr. Burnham privately. When I was recalled, Burnham informed me that the directors had requested him to leave construction entirely in my charge, severing me from surveillance by the Chicago office.

On the Buffalo job I formed an acquaintance that stood me in good stead afterward when I had become a builder. One day a slight, brown-eyed man of perhaps forty, with prematurely gray hair, applied for a lease on one of the side-street stores, together with considerable basement space. He proposed to start a downtown lunchroom. He was from Wheeling, West Virginia, where he had run a small eating house. The agents for the building were skeptical. Everybody in Buffalo went home for lunch. But the newcomer insisted that he was going to change Buffalo

GETTING STARTED



(C. Smith Gardner)

E. M. STATLER

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CHANGING THE SKYLINE

eating habits and, since no one else made an offer for the space, the agents let him have it. I had charge of fitting up his quarters—a dining room, decorated simply but attractively, and a kitchen in the basement.

I was in Buffalo for six weeks or so after the lunchroom opened. The proprietor was a charming fellow. He would greet the customer, lead him to a table, then rush to the kitchen to oversee the preparation of the order. The opening day he had a fair crowd. Then his business faded away. Evidently, after the novelty wore off, people reverted to their old habits of going home at noon. It was pathetic. He would have only half a dozen in for lunch. He got behind in his rent. He was badly in debt. His lawyer came to him and advised him to go into bankruptcy. "No," he said, "if I go broke, I will go broke honestly." Then, gradually, he began to pull out. People began to come to his tables, drawn by the reputation of his good food and his charming manner. Ultimately, he paid off his debts in full and forged ahead till he accumulated enough money to build his own hotel, the first of a national chain.

His name was E. M. Statler.

An extraordinary situation developed on a job immediately following the one in Buffalo. I was architect's representative; the builder was my brother. Theodore, a man of powerful physique, tireless, impatient of slowness and second-ratedness in others, had formed the Whitney-Starratt Company. Whitney died suddenly, and now Theodore

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had set up a new partnership with George M. Moulton. This combination was not destined to last very long either, but just at the moment Theodore was getting a lot of work. He had executed several contracts for Victor Lawson, proprietor of the *Chicago Daily News*, then landed a big job—the Union Station in Columbus, Ohio, for which Burnham had drawn plans.

Burnham sent me to Columbus. I was concerned for fear the owners would doubt the propriety of one brother inspecting the work of another brother. I talked this over with Mr. Burnham and he brushed my doubts aside. But I never got away from my sense of the drama of us two small-townners from the Kansas prairie, working together on that great station.

Another peculiar family tie-up on this job was the fact that in communicating with the Chicago office I dealt with my kid brother, Goldwin. Goldwin, after graduating from the University of Michigan, had gone into Burnham's office as assistant to "Uncle Dan." I had to communicate frequently, because the Columbus job was complicated. We were building a completely new station abutting on an old train shed and the work had to be done without interference with the train movements of five busy railroads. Our men, working above the smoke, steam, and clanging bells of locomotives, were choked and begrimed. Theodore, as builder, had to make many guesses and to apply constantly to me for information. But the very complication of the thing fascinated me. More than ever I felt that

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I wanted to be the man who did the work, not the man who kept tabs on the builder.

I remember one incident at Columbus which illustrates the irony lurking around the corner on any building operation. Just because the work was dangerous, I wanted to make a record of no injuries to workmen. My brother's foremen were exceptionally careful. We had nearly finished and there had been no serious injuries. A railroad official asked us to take down a flagpole that stood at one end of the train shed. He wanted to put it up on the lawn at his country home. Taking down a flagpole was a trivial matter. No one thought of any hazard in it. But, unknown to us, the pole was rotten. As it swung out on the derrick, it broke in two and crushed a man to death. . . .

My next field job for Burnham—and my last—set forth and emphasized the interrelation of builder and designer in certain ways that I had not before appreciated. The building was for the Land Title and Trust Company in Philadelphia. There had been an architectural competition for the design; Burnham was judge. Burnham had condemned all the sketches as unsatisfactory. Thereupon, the bank directors insisted that Burnham design the building himself. He did so reluctantly, anticipating what happened—a clamor of protest from the competing architects and the American Institute of Architects.

The general contractor was an Irishman—McCaul, a man who had begun life as a laborer, had become a car-

penter builder, and after a long, hard struggle established himself as an important contractor in Philadelphia by getting and putting through successfully the new Reading Station.

"I suppose you have come down here to raise hell," was the way McCaul greeted me.

"No, I have come down here to help you if I can," I said.

Burnham had had another man on the job ahead of me. Through no one's fault in particular, two stories had been wrongly built and had to be torn out and done over, at McCaul's expense. I realized, as I studied the job, that the fault really was lack of coordination between architect and builder.

When McCaul understood that I did not blame him, and that I was really trying to see his point of view, that I wasn't there to fight him, but to help him, his attitude changed entirely. As I learned about this man's life, and his struggle upward, and his very sincere wish to do good work, I felt more strongly than ever how unfair it was for an architect to favor the owner at the builder's expense. Fortunately, that practice was more prevalent thirty years ago than it is today.

I had a great admiration for McCaul, for the way he handled his work and his men. Having been a laborer himself, he understood just how far he could push his men, how much he could appeal to their sense of teamwork without making them feel he was putting something over

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on them. Another thing that gave me an admiration for him was that he had won his success in spite of his refusal to play the political game in Philadelphia. McCaul told me, as an example of what went on in Philadelphia, that the City Hall had been twenty-three years abuilding, at a cost of a million dollars a year, and wasn't yet finished! Later, I had some experience with the evil mixture of politics and building in the large Eastern cities.

My admiration for McCaul was, however, somewhat diminished shortly afterward.

The Philadelphia job was finished and I had returned to Chicago, when one morning McCaul walked into Burnham's office and asked to see me.

"How much are you getting here, Starrett?"

"Three thousand a year."

"I'll match that, and give you 25 per cent of the profit on all business you bring into our office."

Here was my chance. I didn't hesitate an instant. I went at once to Uncle Dan and told him.

"I had big plans for you here, Paul," said Burnham. He seemed to read my determination to get away. "I was going to put you on our big new station job in Pittsburgh." Then he looked at me sharply. "You say McCaul is offering you 25 per cent of the profits on any new jobs you bring in? Do you think you can bring any in?"

"Yes, sir, I do."

Burnham knew of that famous diffidence which had

plagued me from boyhood and which I hoped I had conquered.

"Well, Paul, you'll have to, if you intend to become a builder. Remember this, 75 per cent of your success will be your ability *to go out and get the job*." Burnham shook hands. "Good luck, Paul. If you ever want to come back, your job is waiting for you."

"I'm going to succeed. I'd jump in the lake rather than fail," I said.

My determination to get away from the quiet, secure, artistic leisure of an architect's office into the hazardous hurly-burly of building came not only from my confidence that I could build well but also from the knowledge that there was more money in building. We Starretts had been dogged by financial insecurity ever since I could remember. Sometimes, it seemed to me that the most important thing in the world was to have something in the bank so that if you were thrown out of a job your family wouldn't go hungry.

I looked up McCaul at his hotel and told him I was coming with him.

"Very well," McCaul said. "But, Starrett, have you thought this thing over carefully? Contracting is a damned risky business."

"I know it. I'm taking the chance."

"Burnham will be sore at me if you leave."

"I don't think so. I've talked it over with him."

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There was a queer look on McCaul's face. "I'll write to you from Philadelphia," he said.

What did this mean? It was a strange attitude for a man who a few hours before had seemed eager to get me on his pay roll.

Some days later, McCaul did write me. He repeated his offer, but hedged on it in so many ways that I said to myself: "To hell with him!"

Afterward, I found out the reason for McCaul's backing water. He had seen Graham, and Graham declared that I was incompetent.

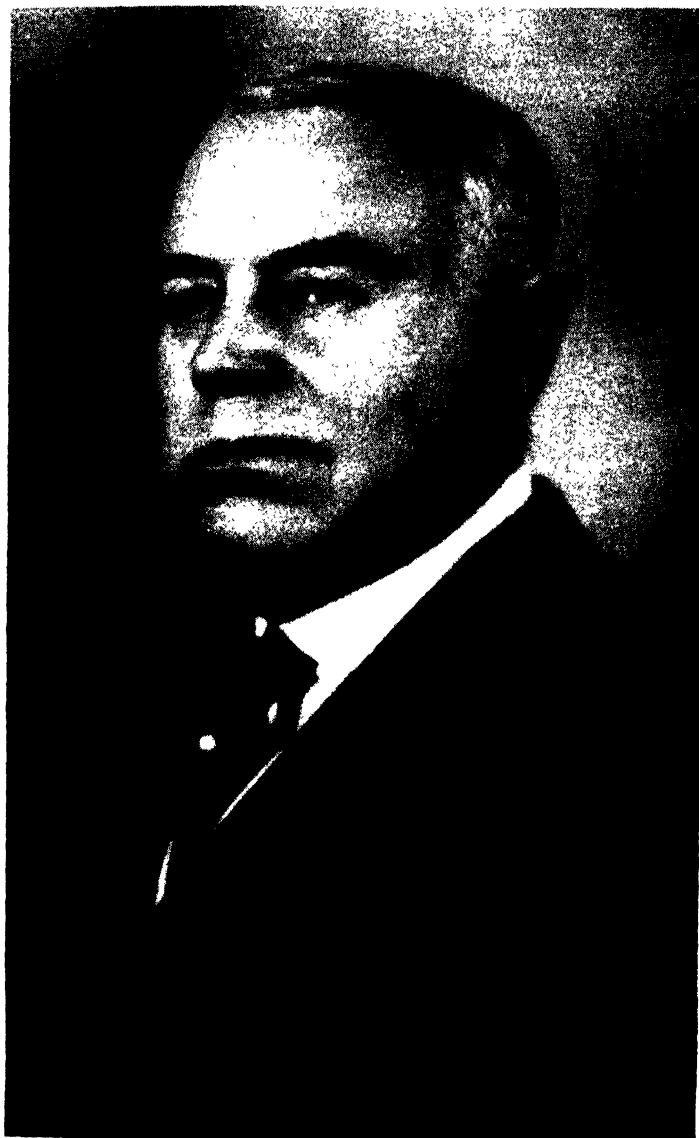
Here I was out of a job—just when I had been thinking of making the future secure!

I put on my hat and walked straight down the street to the office of the George A. Fuller Company. I sent my name in to the vice-president, Harry Black. I had never met Black, but I knew considerable about him. I was ushered in at once.

Black was a dynamic chap—stocky, with dark hair, dark-blue piercing eyes, strong head and jaw, powerful hands—a fighter. He was then about thirty-four. I was thirty-one.

I told my story. Black sat there, seeming to be sizing me up. "I've heard about you from your brother," he said. "Look here, Starrett, we have a building down in Baltimore that looks like a bad job. We bid too low. We'll be lucky if we break even. If you want to take a chance on it, I'll try you out."

GETTING STARTED



(Pach)

HARRY S. BLACK

CHANGING THE SKYLINE

“What about pay?”

“Two hundred a month.”

A tough assignment, a cut in pay, no promise of commission; but my heart gave a leap. At last I had got into the building game.

I SHOULD like to be able to give a good picture of Harry S. Black. I worked with him twenty-five years, with no serious disagreement. He probably had more influence on my life than any other man I have known, and almost up to the moment of his death he was trying to turn me out of the course I had chosen and back into his. It isn't easy to picture him. He was a business genius, a gambler, a financial juggler. He had a smile that would charm the birds off the tree. He ignored anyone in whom he was not interested. He had a contagious sense of humor and told anecdotes illustrating his points effectively. He was big-hearted and selfish and, according to my standards, rather unscrupulous. His contradictions had me baffled. Just when I thought I had him classified, he would astonish me with some unsuspected characteristic.

He was born in Canada, the son of an impoverished major in the British army. As a boy, he worked in a general store, then joined a surveying party in the Pacific Northwest. When he was about twenty, he secured a posi-

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tion with a Chicago woolen house and for several years sold on the road along the Pacific Coast. He started a bank in the state of Washington. Returning to Chicago, he met George A. Fuller, the builder, and after a quick courtship married Fuller's daughter.

Fuller, a New Englander, and a graduate of Phillips Andover, grew up with Peabody & Stearns, Boston architects, and later went into building construction in Chicago. His construction methods on the Rookery, at which I had stared during noon hours, when I was a commission-house clerk, typified the disrespect for traditional methods that Fuller brought to Chicago.

But Fuller, like my brother Theodore a little later on, burned himself out with hard work. His health began to fail soon after Black's marriage to his daughter. Fuller induced Black to join his organization. The latter took command. He invaded the East. Theodore, who had already worked with Fuller and had left him, now came back to the Fuller Company and Black put him in charge of the New York district. Black was pushing the battle on all fronts, and the remarkable thing about him was that he didn't know anything about construction, didn't even pretend to. His task was to hire men who did.

Baltimore was a city of charming people, good food, money, and leisure; but none of those were for me—at the start, anyhow. It was a fight, from the word go.

I had my first experience in persuading an architect

to change his plans—a thing that I had to do many times in later years, but this was the first time and everything depended on doing it right.

The structure called the Massachusetts Building had been both financed and designed in Boston, and the architects had based their foundation plans on Boston conditions. They specified a great mat of concrete four feet thick over the bottom of the excavation. For Boston this was all right, even necessary, on account of the soil conditions there. But Baltimore sits on a wonderful bed of the finest sand. In spite of the biblical warning, sand is the best thing in the world on which to build your house, your castle, or your skyscraper. It bears down into an absolutely incompressible mass.

Fortunately for me, a later set of engineers had in the same set of plans developed and shown a foundation system which did fit Baltimore soil conditions. From these two schemes many inconsistencies developed and many changes became necessary. When the architect saw that I knew how to solve the problem, and when he had my promise that I would give him a thoroughly satisfactory result, he approved of all the changes that I made. Looking back, I feel that I had a little too much courage for my first adventure in the contracting business.

All these complications out of the way, resolved on speed, I went ahead with the steel. Speed in building construction is based primarily on two things. One is looking ahead and knowing when you must have your materials

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and the other is actually having them on the site as required. It is also generally true that a working force give best results when they find materials coming about as fast as they can handle them, or a little faster. For the contractor it is speedy completion that means a money profit. I had become convinced, while working as an inspector for Burnham, that construction should go much more rapidly than it usually did. The great cause of delay was waiting for material—especially steel. Steel was never delivered on time.

In starting on this Baltimore building, the first thing I did was to get the drawings for the structural steel over to the steel company. The next day, I wrote a letter to the mill saying that I wanted the steel at once. This wasn't true, of course; I was just starting the foundations. But I wanted to see if these tactics would work. A few days later, I wrote another letter: "Where is that steel? Waiting for it!"

Well, just when we had finished the foundation and were ready for the steel, it began to come in. It was the first case that I knew of when the steel was right there on the dot. I followed the same plan with the other material. If the work was a subcontract, I made sure that the subcontractor was following up his material and knew it would be ready on time.

We were going ahead full steam when I ran into labor trouble. I found that other Baltimore builders, jealous that an outside firm had stepped in and taken a contract away from them, were telling workmen to stay away from us.

I BECOME A BUILDER

I countered by offering twenty-five cents more than the union scale. Men began to flock back to me, and then, can you imagine what happened? The union called a strike on me. This was my first experience with union labor, and I was bewildered. The men apparently were striking *against* higher wages! I really don't know what actuated the union leaders; possibly, they were in some combination with the disgruntled Baltimore contractors. I called the men on the job together, told them that I wasn't fighting the union, that I simply wanted to get good men who would help me push the job through. Every man answered that he would stick with me. The strike was called off.

In all my career as a builder, I have rarely had occasion to fight a labor union. I have usually employed union men exclusively, because they are almost always better than nonunion. This is natural, anyhow in the East, because the unions are all-powerful and the good workman joins the organization to protect himself.

Fundamentally, I have found out, the secret of handling men is to treat them not as union or nonunion, but as men. On this Baltimore job, I mixed with my men, made them feel that I understood what they were doing, understood every process on the job and what good workmanship meant. We made a game of it, a race against time. The job wasn't mine or Fuller's; it belonged to all of us. I often took my foremen out to lunch, complimented them on the past week's progress and mapped out the next week.

That twelve-story building went up fast. Three months

CHANGING THE SKYLINE

after I started, the flag was flying on the roof. The Baltimore papers printed stories saying that our work had been put through as a stunt, without regard to profit. Of course, this was nonsense. I had simply demonstrated to myself what could be done by getting materials to the job when they were required, and by putting real spirit into the men. Later on, when I knew more about men, material, and organization, I got far better results of course.

I had once occasion to use an effective bit of psychology. At any rate, it turned out to be that, though at the moment I probably did only what seemed natural to me. When we came to install the basement columns, I discovered that one foundation had been put in about six inches too high and the column resting on it had to have six inches cut off its bottom. Having no facilities for sawing it, I called up a leading Baltimore contractor, a competitor, and asked him if he would do it in his shop. I imagine he was a bit surprised, but he said at once that he'd be glad to do the work. He sent the column back the same day. Then he invited me to dinner and became one of my best friends. It is sometimes said that a sure way to turn an enemy into a friend is to ask him to do you a favor. Instinctively, I was acting on that principle.

Harry Black was agreeably surprised at the results on that Baltimore building. Instead of losing money, as he had feared, we made \$58,000. The building cost \$278,000, and \$58,000 was an unusual profit under any circumstances.

I BECOME A BUILDER

On my first job as a builder, I had made money—a large profit. This was immensely important to me. It gave me confidence in myself. It justified my decision to become a contractor.

The change in my mental attitude toward my work, now that I had become a builder, is interesting. My mind seemed keener. I felt that nothing could stop me. I was in my element, at last. I wasn't born to sit on the bench, look wise, and pass judgments. Action was the life for me.

Before the building was finished, I wrote to Black asking him if I might open a Fuller office in Baltimore. I was sure I could land more business. He told me to go ahead. I rented a small room downtown and, to begin with, my office staff consisted of Paul Starrett and a part-time office boy whom I hired from Western Union. After hours, I wrote out reports, orders, checks, and figured on new jobs.

When Black came to Baltimore, I said: "Mr. Black, I think I have done fairly well on this contract. I think I ought to have \$5,000 a year from now on."

"All right," said Black. "You get it."

I felt like John D. Rockefeller. You could live down there on \$5,000 as well as on \$10,000 or \$12,000 elsewhere. It was a marvelous place to live—lots of good food, fish, terrapin, all kinds of fruit, cheap as dirt. My wife and I bought a house for \$3,000, and spent \$1,500 doing it over.

It was lucky I did win out on that first job, because on

CHANGING THE SKYLINE

the next one I needed all the credit with my firm and all the confidence in myself that I could find. It was the first contract I landed by myself—the Washington Star Building.

On this building there were many bidders and one of them, I suspected, was much below my figure. The night the bids were opened, as I sat in the lobby of a Washington hotel, I saw the head of that concern making his way across the floor, obviously having had too many drinks. The next morning, the contract was awarded to him, but luckily for him, he wasn't there to sign the papers. We were the next lowest, but even so, the directors of the *Washington Star* held off from giving us the contract. They wanted to give it to a local firm and began to dicker with a very reputable Washington builder, trying to induce him to come down in his price and to name a shorter time for completion. The building had to be finished by a certain date and the Washington builder said it couldn't possibly be done in that time. The marble alone, he said, couldn't be delivered on schedule.

Finally, after several nerve-racking weeks of waiting. I closed the contract. In the interim, prices had been climbing and my estimates were all upset. I was scared, but I had to take the contract, since I had been asking for it.

On the work the first problem was the waterproofing. The danger was from surface drainage, and for this the plans provided a very inadequate membrane of roofing paper and asphalt. I knew that this would not work. The

I BECOME A BUILDER



FRANK B. NOYES

CHANGING THE SKYLINE

architects told me to follow specifications. I went to see the business manager of the *Star*, Frank B. Noyes, afterward head of the Associated Press, and he told me to do what the architects said. If I had had more experience, I should have gone ahead with a real waterproofing job and paid for it. But the difference in cost seemed too much. So, after getting it on the records that I was acting contrary to my judgment, I followed instructions.

This affair of the waterproofing was only one of dozens of arguments that kept me shuttling back and forth between owner and architect.

Noyes, a quiet man, with dark searching eyes, would sit silent gazing at me as I poured out my story, then I would rush over to see Marsh, head of the architect's office, who was very deaf and used a sort of audiphone which he held against his teeth. Sometimes when I had used many arguments and thought I had made my point, I would discover that Mr. Marsh had removed the contraption from his mouth and was contemplating me in a blissful silence, not having heard a syllable. It was a stifling Washington summer and after a day of these shuttlings between Noyes and Marsh, I would take the train home to Baltimore with my socks wringing wet.

I had the building finished on time, the presses installed and rumbling. Our costs showed a loss of \$8,000 and the basement leaked. I telephoned to my brother in New York and he sent me a man who made the basement tight for \$1,700. Luckily, Noyes allowed this when he came to

O. K. the bills, or else my loss would have been greater. But \$8,000 was bad enough. I half expected Black to fire me. But he only grinned.

"Don't worry," he said, "we'll make it up on something else."

I had underestimated my victory on the Massachusetts Building and overestimated my beating on the Washington Star Building. Many times afterward, I took worse beatings than this with less inward agony.

The affair of the waterproofing taught me a valuable lesson. There is no use worrying much about small things. Later, when matters like this came up and I found the owner and architect indifferent or hard-boiled, I went ahead and did the work right and at the end was fairly paid or paid the cost myself. You make a good impression on both owner and architect if you show that you know what you're doing and don't let small things upset you.

The next thing I did was so reckless that it makes me a little uncomfortable even today.

One afternoon, Black wired me to meet him at the Raleigh Hotel in Washington at ten o'clock the next morning.

When I arrived, Black was there with Henry J. Hardenburgh, the distinguished hotel architect of New York. Hardenburgh had sketches for a new Willard Hotel to stand on the site of the old Willard. The sketches were rough, only dimensions, locations of the columns, number and size of rooms; not a word of description.

"Look here, Paul," said Black, "this is a terrible rush.

CHANGING THE SKYLINE

We must get a figure on this by four o'clock tomorrow afternoon. Can you do it?"

"But what about specifications?" I stared at Hardenburgh, aghast.

"Oh," said the great architect, "we want to make it about like the Raleigh here."

I gazed around at the room in which we were sitting, thinking of the million and one things that go to build and decorate a great modern hotel.

"Is this a competition?" I asked. "Are other firms bidding?"

"I assume so," said Hardenburgh. "We were asked to get in our figures tomorrow."

"Can you do it, Paul?" Black insisted.

To Black, the gambler, this idea of slamming in a figure on a big hotel overnight was great stuff. But Black didn't know anything about construction. He didn't realize what he was asking when he dared me to figure in a few hours what should have taken a week at least.

"All right," I said, taking a deep breath, like a man about to dive off the dock in midwinter.

I shoved the two of them out of the room, rang for paper, and started figuring. I calculated the weights on a few columns, averaged them, and designed my foundations. I estimated the tonnage of steel. I took off the stonework and the brickwork, using my knowledge of the current prices of materials and labor. I calculated the square feet of radiation, the size of pipes required to supply steam,

I BECOME A BUILDER

the size of boilers. The number of lights and the size of dynamos and the cost of elevators. The sheet metalwork and the plumbing. The carpentry, counting the number of door openings and lineal feet of trim. I took off the square yards of plaster required and the lineal feet of plaster cornice, allowing for each. I went on to window frames, glass, roofing, and at every stage my note-taking in Chicago, which Burnham had made me put aside, was invaluable to me. I didn't forget anything—not much, at any rate. On everything I figured as close as I dared, thinking of those other builders who were figuring against me and might be shading prices closer. But I remembered, also, my disaster on the Star Building and tried not to shade too close.

I worked through the afternoon and evening, taking only a few minutes off for a sandwich now and then. I figured on, all night, scattering table and floor with papers covered with figures. At the hour promised, I had my total complete for a twelve-story hotel—\$800,000.

I took my total down to Black and Hardenburgh, who were waiting for me. Black didn't know whether my estimate was sensible or insane, but he laughed and thanked me, and Hardenburgh looked pleased. "Come on," said Black, and I went with them to meet the directors of the Willard Hotel Company. Hardenburgh thought we were merely going to submit a bid and leave. Instead, we were asked to sit down, while the directors went through my figures. Now and then someone put me a question.

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"Can you deliver this building in twelve months, Mr. Hardenburgh?"

Hardenburgh looked at me. Black looked at me.

"Yes, certainly," I said.

"Very well, you get the contract."

Black grinned happily, so did Hardenburgh, and I tried to grin. But I was frightened stiff. Here I had been cutting my figures as low as I dared, thinking of our competitors, and there weren't any competitors. We were the only bidders and we had the contract.

Black and Hardenburgh hurried back to New York, promising more complete plans at an early date.

I found out that the Willard Hotel people had dealt with us because they had watched the Washington Star Building and liked our speed. In addition, they considered the price low. This last was not calculated to make me any happier, nor was the message Black sent me a few days later from New York: "Our boys here in the New York office say you haven't got the cost in this, much less a profit. Your estimate is away too low."

My back was up by this time and I answered: "You leave me alone and I will make a profit."

I simply couldn't let myself believe otherwise. I knew that if I lost on this job, I was finished.

I let every subcontract on that hotel without competition. Through my work in Baltimore and Washington, I knew good men. I called one in on the electrical work, another on plumbing, another on heating, and so on. I

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NEW WILLARD HOTEL
Henry J. Hardenburgh, architect

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showed each one the plans, and said, "What will you do it for?" If his figure was O. K., he got the job on the spot. If it didn't fit my estimate, I said, "I'll give you so much," and he could take it or leave it. But I allowed every man what I believed a fair price.

I finished that hotel on time and made a substantial profit. The fact that I had risked so much and had come out successfully might, you may think, have tempted me to repeat. But I never did an unwise thing like that again. Once was enough.

My success in meeting the challenge on the Willard had important consequences for me. It promoted me to New York.

NEW York was the place for the man who wanted to build skyscrapers. It was to see my hardest battles, my bitterest defeats, my biggest victories. Once New York had seized on the art which Chicago invented, it was inevitable that she was to build more skyscrapers per acre and taller skyscrapers than any other spot on earth.

Geographic and human forces were creating on Manhattan Island the greatest concentration of business and wealth and the highest land values per square foot in the world. Higher land values justified, indeed demanded, higher buildings. The concentration of business produced by higher buildings, in turn, increased land values and justified still higher buildings. It was an interacting process.

I knew that New York was a great opportunity, but I didn't dream how great. In fact, when I came here, at the opening of the century, I didn't even know I was to be in New York permanently. Black called me from Baltimore

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to take the place of a man who was ill. It might, I thought, be merely a temporary assignment.

Fuller had died about this time, Black had moved the head office of the Fuller Company to New York, and my brother Theodore had just quit the Fuller Company again! Theodore was making quite a record in hopping in and out of building companies: In and out of the Fuller Company in Chicago, two partnerships, then into the Fuller Company in New York. Now he had clashed with Black, quitted him, and joined Henry S. Thompson to form the Thompson-Starrett Company, which he was to develop into the Fuller Company's greatest rival. Theodore should have been in business for himself from the beginning, and he would have been if he had possessed adequate capital. He was a man who had to run whatever show he was in.

My first job in New York was the most spectacular skyscraper of its day—the Flatiron Building. You might call the Flatiron Building the most spectacular skyscraper ever built, if you should count the talk it made at the time.

First of all, it was spectacular from its very location, on that sharp-pointed triangle of land shaped, as somebody said, “like a stingy piece of pie,” where Broadway cuts across Fifth Avenue at Madison Square. That site was called one of the half dozen most salient building sites on Manhattan Island, many of which, by the way, were sharp triangles carved by Broadway in its angling across the avenues on its course northwestward. Moreover, the junction of Broadway and Fifth Avenue was considered,

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(Gessford)

PAUL STARRETT,
on arrival in New York

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at the opening of the century, to be the future center of uptown New York. The shopping district was moving from Fourteenth Street up to Thirty-fourth Street, and there, so most people thought, it would remain.

Secondly, the Flatiron Building itself was spectacular, rising so sharp, so thin, so clean, so tall, pointing upstream in the mingled traffic of the two most famous streets in the world. It seemed much taller then than it does today, because it far overtopped all other buildings in that part of town. The Metropolitan Tower, which now dominates Madison Square, was still some years in the future.

I was happy and excited to be in New York and to be working on a building which was such a dramatic expression of the skyscraper idea; but my position was difficult, too.

My old boss, Burnham, was the architect, and Black had financed the project. Burnham was accustomed to be the Czar on his buildings; Black, who had quite as much ego as Uncle Dan, wanted to decide every disputed point himself. The two constantly clashed. I was caught between them, tugged by divided loyalties. The outcome was a serious estrangement between Black and Burnham. But Burnham's kindly feeling for me was apparently not affected.

Black was so sure that this was to be the permanent center of New York that, before the building was completed, he refused an offer that would have given him a million dollars profit. Nevertheless, a few years later, we built

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(Equitable Life Assurance Society of U. S.)

FLATIRON BUILDING
D. H. Burnham & Co., architects

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another spectacular skyscraper, the New York Times Building, on another spectacular piece of pie, a half mile farther north, at Broadway, Forty-second Street, and Seventh Avenue, which was becoming a new center of New York.

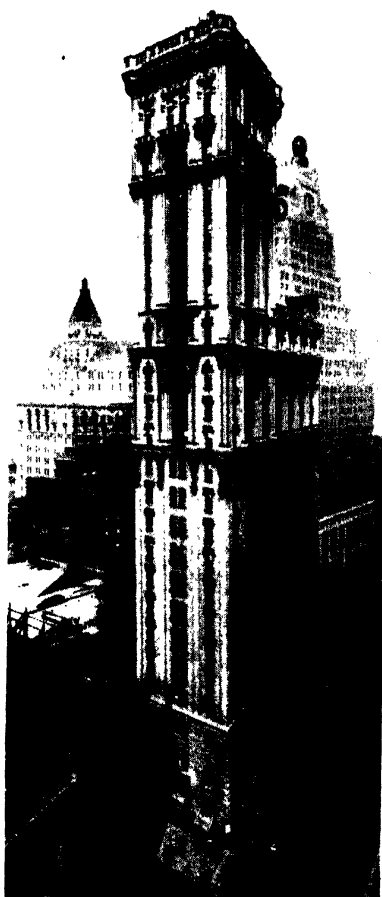
When the Flatiron Building was finished, Black established the quarters of the Fuller Company on one of the upper floors. My office had a wonderful outlook—across Madison Square to Saint Gaudens' Diana, gleaming on top of Madison Square Garden. That building, designed by a great architect, Stanford White, seemed to us and to everybody a permanent part of the New York landscape, the all-time focus of metropolitan sport and fashion.

But I didn't spend much time sitting there enjoying the view. My worries on the Flatiron Building were nothing to those on my next job.

At some time before I reached New York, Black had negotiated the contract to erect the new store for the R. H. Macy Company, which, as a daring stroke, had decided to move from Sixth Avenue and Fourteenth Street to Herald Square at Thirty-fourth Street. Black had put me in charge of all Fuller work in Manhattan above Fourteenth Street, so the Macy store fell to me. It was a mess.

Black had contracted to erect a building not to cost more than twenty cents a cubic foot. There were no plans—there was nothing specified. Apparently, Black thought that at such a price he could make a profit, no matter what

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(N. Y. Times Studio)

NEW YORK TIMES BUILDING

Eidlitz & McKenzie, architects

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kind of building was specified. But this was a dangerous assumption. At the start, the general idea was a simple building, but the Straus family, owners of the Macy Company, hired an architect who drew plans that were anything but simple. The excavation was already under way when I took control. Then the Strauses told us that they wanted a subbasement. This was not in the original project at all. Excavation for the subbasement meant a tremendous amount of blasting out of solid rock at a cost of thirteen cents a cubic foot, leaving only seven cents a foot to build and finish the basement after the rock was cleared out.

It was over six months before we got the plans. We had a fixed date for completion, and this long delay necessitated using much overtime, greatly increasing our cost.

Then we learned that the Straus family had friends among the subcontractors, to whom they apparently had made promises. Usually, the general contractor chooses his subcontractors; but to conciliate the owners we felt obliged to take on some of these people. Seemingly, the Straus protégés had resolved to take advantage of the situation and spend money. No matter what the building cost, the owner wouldn't have to pay more than twenty cents a cubic foot! For example, the contractor on heating and lighting installed double the boiler and dynamo capacity that was required.

Isidor Straus, president of the Macy Company, had turned the supervision over to his sons, Percy and Jesse,

both then in their twenties—probably, to give them business experience. Jesse Straus—tall, slender, good-looking, rather imperious—was later to be Ambassador to France, but he was no diplomat to me. It was I who had to be the diplomat. He knew he had the whip-hand over me in the shape of that twenty-cent contract. It was my job to try to persuade him out of some of his more extravagant ideas. Even when I was arguing with Jesse, I knew that he was going to get the best building he could for the money.

One afternoon, I met Isidor Straus on the street. He was a patriarchal figure, tall, bony, broad-shouldered, with prominent eyes behind thick glasses and side whiskers like Emperor Franz Josef. Mr. Straus did not know exactly who I was, but he recognized vaguely that I had some connection with the Fuller Company.

“How are you getting on with your building, Mr. Straus?” I asked.

“Oh, very well, I believe,” he said. “But my sons are having a lot of trouble with one of your young men named Starrett.”

Jesse Straus complained to me, years later, that his fight on the Macy Building had ruined his health. I wasn't the only man who worried him, however. There was an Italian barber who had a shop on the site with a lease which had not expired. Jesse Straus tried to buy him out, but the barber named a figure that seemed outrageous. We went ahead with our excavation, undermined the barber shop, shoring it up on long poles, while the Italian

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went on cutting hair and fighting Jesse Straus. It looked as if the new store would have to be built right around the old barber shop. One morning when I came down to the job, the shop had completely vanished. One of our foremen, exasperated by the bother, had blown up the shop with dynamite some time in the night. The barber sued the Strauses, but the damages he got were far less than their offers for a surrender of the lease.

There was another curious complication on this job. You may have wondered, in passing along Broadway, why a small old building cuts a notch in the tall Macy Store precisely at its most salient corner, Broadway and Thirty-fourth Street. That corner plot, thirty-by-fifty feet, was owned by a member of an old New York family, the Rev. Duane Pell. Dr. Pell was abroad when the Straus family began assembling land for their new store; they cabled Dr. Pell, asking his price; he cabled back that he would sell for \$250,000. This was a terrific figure for a plot of that size, but the Strauses cabled an acceptance. Pell cabled in answer that he was sailing home and would discuss the deal when he reached New York.

Now, a rival of the Strauses enters the scene. Some years earlier, Henry Siegel, a Chicago department store man, had invaded New York with a store on lower Sixth Avenue. When the news spread about that Macy's was moving uptown, Siegel became alarmed. He evidently foresaw the ultimate abandonment of lower Sixth Avenue by the retail trade. What increased his distress was that the Straus

family announced that their old store at Sixth Avenue and Fourteenth Street was to stand empty for two years. Shrewdly, the Strauses knew that a big empty building would emphasize and hasten the coming desolation of lower Sixth Avenue.

Then Siegel found out about Dr. Pell. When Pell stepped off the boat, Siegel's real estate man was there with a bigger offer for his corner. Pell sold to Siegel. Siegel thought he now had the Strauses by the throat. He would either force them to lease their old store to him or wring a ruinous cash price out of them for his strategic corner. But the Straus family wouldn't deal with Siegel. They let him keep his corner. They built an arcade right around it to divert the shopper past the corner and into the store.

Do you know what it is to be in a fight where you are beaten from the start? If you do, you can appreciate my emotions as I juggled steel, cement, and argument in putting up the Macy store. I began to realize that, no matter what I did, no matter how much I fought to keep down the costs, we would lose heavily.

Even when the store was finished, my troubles weren't. There was the question of how to measure the cubic contents of the building. We thought we knew; the owners and their architects had different ideas. We measured from the bottom of the foundations to the parapet wall. They cut out part of the foundations and the parapet, which made a great reduction. We went to court over this

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question and the suit lasted five years. I don't know what the final settlement was, but I do know we took a very heavy loss.

This experience taught me two things. One is never to take on a building on the cubic-foot basis unless you know the exact specifications. The other is never to go to law about anything. It is cheaper to settle at the start for what you can get.

I had left my family behind in Baltimore. My second daughter had just been born when I got the summons to New York, so that it was difficult to pull up stakes immediately. Also, as I have said, it was uncertain how long I might be stationed in New York. This first separation from my family since my marriage was irksome. During the day's work, time passed easily, but the evenings were difficult. I think I went to the theater more in those first months in New York than ever before or since—to see Richard Mansfield in *Cyrano* and *Beau Brummell*, Weber and Fields, Lillian Russell. At the end of the week, I would take the train for Baltimore. Sometimes, I had an excuse to run down in the middle of the week, too. My old fellow Kansan, Walter Clough, whom I had met at the Chicago Fair, had now come to work for the Fuller Company, and I had put him in charge of the Baltimore office. He had to be broken in.

Then Black landed several big contracts in Pittsburgh—a building for Henry Frick, the steel man, and two

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bank buildings. He asked me to superintend the two banks. This meant that I was responsible for important work in New York, Baltimore, and Pittsburgh simultaneously. I was working under extreme pressure. In the midst of it, pneumonia struck me down; I was in bed at home, three weeks. I had a fight, but the constitution built up on the New Mexico ranch pulled me through.

Shortly after this, Black put me in charge of all Fuller jobs on Manhattan Island. My salary remained at \$5,000 a year, but, on my insistence, he granted me a 10 per cent interest in net profits on my jobs. Black gave me a free hand in my end of the work. He was in charge of finance; I was construction chief. Believing that New York was my future, I brought my family on from Baltimore.

A catastrophe—the great fire of 1904—took me back to Baltimore, and the trip had some interesting consequences for me and for the Fuller Company. It brought new and interesting experiences with men and with buildings.

ARE you Starrett?" said a shrill voice, with a slightly foreign accent.

It was in the crowded lobby of the Hotel Belvidere in Baltimore, the day after the great fire. I had hurried down to study the effect of the conflagration on the skyscrapers we had built in the heart of the city. Alarmists had been saying that these steel skyscraper frames, with their thin skin of brick, stone, or terra cotta, would warp and crumple under the intense heat of a great fire.

The fire started in Southwest Baltimore and destroyed a large part of the city. Fireproof buildings standing across the line of fire stopped the conflagration and enabled the fire department to get control. When the fire reached these, the window glass melted and the fire invaded the interiors, burning every inch of wood, including the doors, trim, and floors. It even burned out the wooden sleepers imbedded in concrete to which the floor boards had been nailed. Electric light fixtures were

melted, electric light bulbs hanging like icicles from the sockets. From this, the fierce heat can be imagined.

Fireproof buildings had never before been put to such a test; but I was relieved to find that in them none of the structural members was seriously affected. Woodwork was consumed and some damage had been done to other parts of the exteriors; but all the damage could be repaired at comparatively slight cost, and all these buildings continue in use today. My confidence in the ability of American builders to make our towers fireproof was strengthened.

After tramping for hours through smoking streets and blackened buildings, I was back at my hotel again when the excited voice attracted my attention.

An odd figure confronted me—an oldish man, short and stocky, with white hair and bicycle-handle mustaches. He wore a Prince Albert and a black slouch hat. His clothes and shoes were covered with soot and ashes.

“Are you Starrett?” he repeated. His voice was shaking with emotion. “I am Felix Agnus.”

I shook hands with him. Everybody in Baltimore knew the name Felix Agnus. He was a big newspaper man of the town, the proprietor of the *Baltimore American*. I had heard many stories about General Agnus, but I had never happened to meet him.

“Starrett,” he exclaimed, “my building has burned down! I want another! Will you build it for me?”

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"I certainly will," I said.

"Good!" He shook hands again. "Come over here!" He drew me out of the crowd.

Rapidly he told me what he wanted—a model newspaper plant, one that would advertise him and his paper by its beauty and efficiency—in short, the finest newspaper plant in America. Someone in the hotel lobby had pointed me out to him as the manager of the company that had erected most of the Baltimore skyscrapers which had resisted the fire so well, and evidently he had picked me as his man. Agnus didn't know whether he was to collect any insurance on his old building. Perhaps the fire had thrown the insurance companies into bankruptcy. Nevertheless, he was boldly striking ahead as the leader in the rebuilding of Baltimore.

"One year hence," he exclaimed, "on the anniversary of this great fire, I want to start publishing my paper from my new building. Can you have it ready?"

"Yes," I said.

Rapidly on a scrap of paper I figured the probable cost of such a building.

"What are your terms?" he asked.

"Cost plus 8 per cent."

"That is perfectly satisfactory to me," he said.

He had no architect in mind, and I recommended a firm, one of whose members was an old friend of mine from Burnham's office.

I took the train back to New York, thinking the matter

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(Perkins)

GENERAL FELIX AGNUS

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was all settled and feeling happy that I had picked up a new client. But it wasn't settled. A few days later I received a summons back to Baltimore.

General Agnus had as his attorney a young man named William Thomas, tall, spindly, with a shock of curly hair. The General had known Willie since the cradle. In fact, Willie's father had been the general's attorney before him, and Agnus seemed to have a great affection for Willie and an immense respect for his judgment. Willie, it seems, thought things were going entirely too fast between me and the General, whom he had been filling full of warnings against rushing ahead with a building on a cost-plus basis without knowing more about me. Carefully, I went over everything with Willie Thomas, while Agnus listened.

"So you see it is all right, Willie," said the General.

"Yes," said Willie doubtfully.

I returned to New York with the assurance that the contract would be signed and sent on immediately.

A few days later I was summoned to Baltimore for another interview. A new set of suspicions had risen in the mind of Willie Thomas. Again, he went over the details of our prospective contract, looking for loopholes through which I might jump. Again, having quieted his doubts, I went back to New York, and again I was summoned to Baltimore.

Finally, after several such sessions of explaining and re-explaining, this affair got on my nerves. I told Agnus

that unless we started to work, we would never finish his building on time.

"Willie," said the General, "he's right! You can't make an omelet without breaking eggs."

He picked up his pen and was about to sign, when a telegraph boy entered the office and handed the General a telegram. Agnus tore it open. His face registered surprise. He handed the telegram to Willie. Willie read it. Willie's face registered surprise, then satisfaction.

"General," he said, "I believe that in view of this message, our negotiations with Mr. Starrett should be broken off!"

The General handed the telegram to me. It was from a prominent St. Louis builder:

I UNDERSTAND THAT YOU CONTEMPLATE THE ERECTION OF A BUILDING. I AM ABOUT TO OPEN AN OFFICE IN BALTIMORE AND IT WOULD BE OF GREAT ADVANTAGE TO ME TO HAVE YOUR BUSINESS. THEREFORE I PROPOSE TO ERECT YOUR BUILDING FOR YOU AT ACTUAL COST AND CHARGE NOTHING FOR MY SERVICES.

Willie watched me. I could see that he felt that all his suspicions of me, all his delays in closing with me, were now justified. I read slowly, thought quickly.

"General," I said, "I have no doubt that this builder knows better than I do what his services are worth."

The General laughed.

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“Willie, he’s right!”

He seized the pen and signed.

General Agnus was one of the most charming men I have ever known.

His life story was romantic. Born in France of good family, he had gone around the world on a sailing ship as a youth, then landed in New York, where he obtained a job as an engraver at Tiffany’s. When the Civil War broke out, he enlisted in the Union army, rose rapidly, and was brevetted a brigadier-general while still in his twenties, the youngest man to attain that rank. Wounded in the Peninsular Campaign, he was nursed back to health by Annie Fulton, daughter of the proprietor of the *Baltimore American*. Patterning his life on the storybooks, just as Dan Burnham had done, Agnus fell in love with his nurse and married her. After the war, he entered his father-in-law’s business and later inherited it.

During the period when we were building for him, I saw him constantly and his friendship gave me a glimpse of a life I had hitherto only read about. He had a beautiful place in the Green Spring Valley—an old Southern mansion, with a large staff of Negro servants. Wherever I turned, there was a black boy at my elbow asking if he could do something for me—brush my clothes, black my shoes, or mix me a drink. When I went to bed at night, the General himself escorted me to my chamber and literally tucked me into my big four-poster. He would put matches

on the table beside my pillow and point to the bellpull which he told me to "yank" if I needed anything at any hour of the night.

Eating was a rite at the General's. Like Black, he was an epicure, and he knew his viands as few men did. He told me that one afternoon he was at his club when the talk turned to the subject of wild duck. General John Gill, president of the Mercantile Trust Company, claimed that he could identify any kind of duck by taste—mallard, canvasback, redhead, or what not. The publisher expressed his doubts. To settle the point, it was proposed to hold a dinner at which all the assembled gentlemen would be guests. If the banker proved his claim, the publisher would pay for the feast. If not, Gill would pay.

The dinner was served. A beautiful duck was placed before General Gill. He carved a piece from the breast, tasted it, and said, "Gentlemen, this is a redhead." "No," said Agnus, "you're wrong." "Hold on," said Gill, "I made a slip, it is a canvasback." "No," said Agnus, "you're wrong." "Oh, of course," said Gill, "I know what it is now. It's a mallard." "No," said Agnus, "you're still wrong. It's a puddle duck from my back yard."

My work for General Agnus led to work for another publisher, Frank A. Munsey. This turned out to be a quite different adventure in building.

Munsey telephoned to me one day, shortly after we completed the Agnus job. He was directly below me in the

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Flatiron Building. Munsey had happened to see our offices on the nineteenth floor and the stunning view from the windows so impressed him that he leased them. We moved to the floor below and let him have them.

“Starrett,” said Munsey, when I entered his office, “I’ve seen that building you have put up for Agnus down in Baltimore. I want one just like it in Washington. The same size, the same cost, and everything. Who is a good architect?”

I hesitated. I had never had any dealings with Munsey, but I suspected from what I knew of him that he was more finicky than Agnus and might not take my advice as to an architect. If the man he chose should find out that I had originally recommended someone else, my relations with the designer might not be so agreeable.

So, in answer to Munsey’s question, I named three prominent New York architects who specialized in the kind of building he wanted.

“Can you build a building as good as General Agnus’s for the same money?” Munsey asked.

“Yes,” I said.

Then Munsey and I came to a rough agreement on terms. He told me he would let me know in a few days his decision as to an architect.

About a week later, he called me up and announced that he had selected Stanford White, of McKim, Mead & White, to design his building.

“Well, Mr. Munsey,” I said, “you have undoubtedly

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FRANK A. MUNSEY

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chosen a great architect, but you will have to forget everything I told you about costs.”

“Why so?”

“Because Stanford White won’t design you a commercial building. He will put a lot of embellishment into it that will cost much more money.”

“Oh, no. He’ll do what I tell him,” said Munsey.

“Like hell he will,” I said.

Munsey told me to go over and see White in his office in the Mohawk Building and tell him I had been chosen as his builder.

I had met White on several occasions, but I didn’t know him well. He was a curious man—big, six feet two or three, with powerful shoulders, reddish pompadour, straggling red mustache, and a little thin, high-pitched whine of a voice. When he was excited, as he usually was, he would prance about the room holding out his arms as if he were sparring with an invisible opponent.

I told White I had reached an agreement with Munsey and had come to discuss a form of contract. I suggested our usual form.

“Starrett, damn it all, do you think you can come over here and run our office? If you sign a contract for this building, it will be on *our* printed form and you won’t be allowed to change a single word of it!”

“Let me see your form,” I said.

He handed me a document consisting of four closely printed pages. It tied the builder down hand and foot.

"Mr. White," I said, "will you just glance at the form I have here, the result of years of study to bring the essentials of a contract down to the fewest possible words? If you don't agree that mine is better, I'll sign yours."

Just then Mead, another member of the firm, entered the room. "That's a fair offer, White," he said.

White took my form and read till he came to the clause designating the architect as the sole arbiter in cases of dispute. "Why, Mead," he said, "this is all right!"

White worked up his sketches a few days later and turned them over to me. As I had foreseen, the cost would run much beyond the estimate I had given Munsey. I went over and warned White.

"For heaven's sake, Starrett," he shrieked, prancing about the floor, "why did you give Munsey any such ridiculous figures?"

"That was before he engaged you," I said.

"All right, Starrett, then you'll have to take all the blame! Come on! Let's go over right now and see Munsey!"

Munsey was sitting in his office exactly in the point of the Flatiron Building, his long, solemn face rising behind a bouquet of American Beauty roses.

I expected to have to do the talking, but before I could utter a word White burst out:

"Mr. Munsey, we have discovered that the soil underneath your building is a swamp. God Almighty did that. So the foundations will cost \$50,000 more. I am giving

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you a marble front up to the third story. Naturally, this is more expensive than limestone. This means \$50,000 more. To top off the building, I have fashioned you a beautiful polychrome terra cotta façade, something in which you can take pride. This means \$50,000 more.”

He paused, gazed across the square to his Madison Square Garden in which, only a few months later, the bullet of Harry Thaw was to cut him down.

“You have a fine view here, Mr. Munsey,” he said, and ducked out of the room.

Munsey stared at the door through which Stanford White had vanished, then gazed at me. His face broke into a grin.

“Well, I’ll have a good building, anyway, won’t I?”

Stanford White was the only man I knew who could get away with a situation like that.

He treated a client as if the man was supremely lucky to have the services of the great Stanford White. He was full of whims and flashes, and expected his client to accept them as the signs of genius. He could build a building half-way up, decide it didn’t please him, tear it down, build it differently, make the owner pay the bills and like it.

Unquestionably White possessed a keen sense of beauty, but, like many another architect I have known, he could be very neglectful of the practical side of his buildings. He almost took the position that usefulness should be subordinate to appearance. I, on the contrary, had a firm conviction that a building, no matter how beautiful, should

first of all be adapted to its purposes. If it was an office building, you must consider what were the requirements of tenants in that city and that section of the city. For instance, in this building of Munsey's in Washington, White had arranged the windows in triplets on the street front, a large window in the middle flanked by two smaller windows. These wide units of window space meant that the street front on each floor would have to be divided into very large offices. My experience in Washington was that few tenants would pay for large offices. I argued with White and Munsey, but they were not impressed. "Tenants will have to take my building as they find it," said Munsey.

The building was finished. All of it rented easily except the offices in front. Munsey wouldn't come down in his rents, the front offices stood empty. Some months later—after White's tragic death—Munsey called me in and asked me the cost of tearing out the entire front of the building and rearranging the windows so that the floors could be divided into small offices.

I told Munsey that the plan was foolish. It would cost him so much that he would do far better to take smaller rents from the offices as they were. But, no, Munsey said he was irritated by the vacancies and was going to change the floor plans. He commissioned McKim, Mead & White to make a new design, with marble over the entire front. When Munsey gave me the order for the change, I said: "You are the only man in the world who would do a thing

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like this!" Munsey liked that. I heard him repeat it several times to friends. It was a tribute to the man who could afford his whims.

From then on, Munsey gave me a great deal of work, always on a cost-plus basis.

Then the question came up of a building in New London, Connecticut. A friend of a prominent builder told the publisher that he was foolish to let out his work on a commission basis, that he would save money by getting competitive bids. I argued to Munsey that this would be a mistake. He was always changing his mind and I could see that some builder might deal very unfairly with him on "extras." But Munsey went ahead with competitive bids.

I made a careful estimate, but did not submit it. Then, thinking I knew Munsey, I waited in my office at the hour appointed. The telephone rang. "Paul," said Munsey, "where is your bid?"

"I've made an estimate, and I'd be glad to show it to you, but I'm not bidding."

"Well, hurry up and bring along your estimate."

I found Jacobson, from the architect's office, seated beside Munsey. The unopened envelopes of the bidders were spread on the mahogany desk.

"Let me see your figures, Paul," said the publisher. He ran through my figures, glanced at the total. "Is that your price?"

"Just add the usual 8 per cent and you have my price. But I'm not bidding."

"All right, Paul," said Munsey. "I'll go ahead with you."

The unopened proposals still lay on the desk.

"But," Jacobson protested, "what shall I say to these other men who have submitted estimates?"

"Oh," said Munsey, "explain to them as delicately as you can."

I can imagine how I would feel if I had submitted a bid and my proposal hadn't even been opened. I am afraid that Jacobson had difficulty in explaining the matter delicately.

People said that Munsey had ice water in his veins instead of blood. Sometimes I, too, thought this was true, yet my final impression of him—years later—contradicts this judgment. My brother Goldwin had come to New York and, after a short experience in building under Theodore, had set up for himself as an architect. Munsey took a great fancy to him and gave him many commissions. A few days after Goldwin died, I had occasion to call on Munsey. He told me to sit down, but he said he couldn't talk business; Goldwin's death grieved him too much.

"Paul," he said, "your brother had all the strength of an able man and the charm of a beautiful woman."

Tears were running down his cheeks.

I NOW reach a point in the story of my building experiences when the conflicting bonds of business and of family led to a curious crisis in my life.

I think I have made clear that the Starrett family ties were strong. We five Starrett brothers had a genuine affection for each other, always kept closely in touch with each other, and had a keen interest in each other's progress. And in the earlier years all of us expected to get into the same field, building construction; at the time of which I am now speaking this had actually come true. I have told how Ralph, after working in a hardware store and a bank, had joined Theodore in the contracting business in Chicago, and how Goldwin, after graduating at Ann Arbor, had gone into Burnham's office. Bill, the youngest, after two years in engineering at Ann Arbor, left college and worked in a wholesale grocery, then started in with the Fuller Company as timekeeper. And now Theodore, head of the vigorous new company, Thompson-Starrett, had



(Moffett-Russell)

GROUP OF FIVE STARRETT BROTHERS

Reading from left to right, Paul, Goldwin, Theodore, William A., Ralph

brought in all three younger brothers, Ralph, Goldwin, and Bill, to be with him in New York.

The next factor in the story is that these two building companies, Thompson-Starrett under Theodore, and the Fuller Company, in which I was the actual construction chief, forged ahead to dominate building construction in New York. Theodore flanked by three other Starretts in one company, and I in the other, rivals in the greatest and most active construction field in the United States.

Now, for the next element in the story—Harry Black. Black, my boss, had a Napoleon complex. Like Napoleon and those other Napoleons of my day, Harriman, Jim Hill, and J. P. Morgan, Black loved to amalgamate and expand.

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He had expanded the Fuller Company from a \$50,000 company to a \$15,000,000 corporation, \$5,000,000 preferred and \$10,000,000 common stock, justifying half of the common by "good will"; and he had drawn in as directors such men as James Stillman, Henry Morgenthau, father of the present Secretary of the Treasury, and Hugh Grant, former Tammany mayor. Stillman called Black "the brightest young man in Wall Street."

But this was just the beginning for Black. "Bigger and bigger" was his watchword. Bigger and bigger was the spirit of the time. Munsey himself was whipping up this spirit by his articles in *Munsey's Magazine*, lauding the great amalgamators, the emperors of banking, industry, and commerce—Rockefeller and Standard Oil, United States Steel, Morgan, and Schwab.

Black's next move was to engineer a giant realty corporation whose purpose was to acquire, manage, operate, and speculate in large properties in New York. This corporation, called the United States Realty and Construction Company, was a combination of the Central Realty Bond and Trust Company, headed by Morgenthau; the New York Realty Company, owned and operated by Flake and Dowling, two very able real estate men; and the Fuller Company. It had a capital of \$66,000,000. The conservative *New York Evening Post* said, "One half of this capitalization is pure water and wind." I don't know whether this was true or not, but, water or wind, Black assembled an astonishing and strangely assorted crew of

directors for the new enterprise—aristocratic Charles Francis Adams, Henry Morgenthau, John W. (“Betcha Million”) Gates, Henry L. Higginson, Charles M. Schwab, James Stillman, Cornelius Vanderbilt.

Black had expected to be president of the corporation, but his new associates, while granting his ability, feared he had too much the reputation of a speculator. Though, no doubt, they were quite willing to reap the profits of speculation, they wanted somebody as a “front” who would, so they said, inspire public confidence. They chose Bradish Johnson. Black became chairman of the board.

John W. Gates was a great gambler, as was Black. Black once told me of a game of baccarat at the Waldorf, participated in by himself, Loyal Smith, Gates, John Drake, and, I think, C. M. Schwab. There was another player, a broker who handled stock operations for some of the players. Black and Smith were bankers; if you understand baccarat, you will know what this means. I don’t know much about it, except that the bankers bet against the players. Black told me that while at one stage of the game he and Smith were losers to the extent of \$1,100,000, he quit \$60,000 to the good. Black chuckled when he told me he had heard the broker who had sat in the game for a short time say that he had lost \$75,000 and they didn’t know he was in the game.

Black told me another story. Gates, with Isaac Ellwood and several others, formed a pool on some stock, but they did not trust each other. So they arranged a trip West in a

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private car together. They played poker and carefully inspected the telegrams and letters which each one received. At Kansas City Ellwood left the train, saying he wanted to get a sandwich. Although he was gone for only a few minutes, it wasn't long before the other members of the group were flooded with telegrams saying that someone was unloading the stock. They taxed Ellwood with it. He laughed at them and said he knew how highly they all valued the stock and he was letting them have his. Nobody got mad and the poker game went on. Ellwood had outplayed them, that was all!

The United States Realty and Construction Company had many excellent objectives. If a man owned a piece of metropolitan real estate and had no money with which to put a modern building on it, the corporation would finance a building for him and take a mortgage on it. If a man had money and no land, the United States Realty would show him how he might acquire a valuable corner and erect a profitable skyscraper. If a bank or an industrial company had outgrown its quarters and required a larger space, the United States Realty would show the directors how they might trade their present property in on a more desirable plot and finance a new and larger building with rentable space that would carry the investment. In other words, the United States Realty cultivated neglected opportunities.

And the beauty of it, or rather, I should say, the beautiful theory of it was that the Fuller Company as an incor-

porated part of the organization would do the building for these clients.

The corporation proposed, further, to assemble important properties under its own management, improve them with large buildings, install central heating and lighting plants to cut operating costs, and so in time dominate ownership and management of office space in New York. This, too, would bring building jobs to Fuller, so Black said.

Another idea of Black's was that his directors, with their fingers in banking, steel, oil, and politics, would throw a tremendous number of building contracts to us. Actually, we got only one job that way. Most of our building jobs I went out and got myself, against the stiffest competition in the world, and against some irksome handicaps, to which I shall refer in a moment.

The United States Realty stock was listed on the Stock Exchange, and Black started active trading in it. Quietly he slipped out of the presidency of Fuller, in order to devote himself to his large schemes of financial speculating and real estate manipulating, and in his place he put Judge S. P. McConnell, of Chicago, who had been his attorney. McConnell knew as much of building as Black did, which was practically nothing.

Things didn't go any too well with United States Realty. There were internal ructions. "Betcha Million" Gates and Grant, Tammany politician, were distasteful associates for the Higginsons, Adamses, and Vanderbilts. Black had held up entirely too glowing a promise of

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Fuller building profits. The Macy store, which he secured through Morgenthau's friendship with the Straus family, he had pictured as a tremendous money-maker and, as I have shown, we lost on it. Furthermore, it was Morgenthau who insisted on the lawsuit against the Strauses, which only put us in deeper.

During an earlier period, John W. Gates became acquainted with Thompson and Dundy, two showmen who had developed at Coney Island an amusement park called Dreamland. The park attracted great crowds, and Gates was ever alert when a dollar could be made. He had an uncanny prescience when an honest penny was in the offing. "Skip" Dundy was something of a regular circus man, a slim, dried-up person—not unlike a frost-bitten persimmon—with a streak of vulgarity. Thompson was a former architectural draftsman with some fantastic ideas on decoration, such as had found expression at Dreamland. This prospering pair put their heads together with Gates and conceived of a theater to be called the Hippodrome, seating 5,200 people and staging vast spectacles, which Thompson himself would direct.

The Realty Company owned a large piece of property at Forty-third Street and Sixth Avenue, and under Gates's persuasion, became interested. The building was quickly decided upon. It was an exciting enterprise. Thompson designed the theater, but he was assisted by the Fuller staff, fortunately, for his abilities were not equal to his preten-

sions; the plans were made as the building progressed, and included such innovations as the tank which was soon to mystify all America. Gates accused us of hauling cinders for concrete in taxicabs, which was an exaggeration, but does indicate the pace at which we progressed. The ceiling was painted while the plaster was still wet. Soon the theater was opened with éclat.

Crowds attended the Hippodrome. It was the show place of New York, if not of the whole North American continent. But the Realty Company had ventured far afield under Gates's guidance. The gentlemen of its board now found themselves in the roles of "angels." Thompson and Dundy were permanent managers for a period of years, with the Realty Company furnishing the money for productions. The former Coney Island showmen, with this backing, were lavish on a grand scale. They would make ready a production until it was almost set to open, then change their minds, throw away all the expensive properties, and start anew. There seemed no limit to Thompson's caprices. Crowded houses promised prosperity, and for a time the showmen's eccentricities were tolerated. But the profits were not forthcoming. Gates decided to take action and told Black that he would break the contract, however difficult. "Watch me. I'll do it, or board up the place."

Gates called a meeting of the board of directors and invited the two men. He announced that a merely formal reorganization seemed desirable; all the officers were re-

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signing and all contracts were being canceled to permit a new arrangement in the financial structure of the Hippodrome Company. Resignations and cancellations had been prepared and were handed to all present. Thompson and Dundy, not aware of Gates's dissatisfaction, signed. After Gates had the signatures, he announced to the astounded showmen that their control of the Hippodrome was over.

But at least Thompson's tank had proved the sensation of the decade. A line of attractive chorus girls would march into the water before the eyes of a marveling audience, and disappear. What had happened to them? Once the procedure was reversed; Marcelline, the clown, lowered a line and with a delighted whoop brought up a bulldog, while children in the audience shrieked with astonished laughter. The explanation was a simple one, but the secret was well kept. Several feet below the surface, there was an air chamber, an inverted half cylinder with a ramp leading up under the stage. The girls ducked under the water, found refuge in the tunnel, which was closed at both ends with semicircular diaphragms. Raising their heads into the air, they would walk along to the farther end of the tunnel and again duck out into the open air in the wings to take off their dripping costumes.

Black had built buildings, bought buildings, lent money on buildings, on the confident assumption that New York land values and demand for office space were on the up and up. In the long run, this was true. But just at this point business and real estate values took a nose dive. The stock

dropped on the Exchange. There were no dividends. Black's associates soured on him.

Instead of trying to pull the Realty Company up, in face of its difficulties, Black's talk was bearish. This seemed strange from a man who up to this time had been all optimism and big promises.

"Paul," Black said to me one day, "you had better resign. There's no future for you here."

"But I've a contract with you for salary and bonus."

"There won't be any profit, so there won't be any bonus," he said.

I objected to this. We were busy on several jobs that should yield a good profit. I refused to resign.

I didn't realize then that all this "bear" talk was merely Black's game to get more complete control of United States Realty.

A little earlier, Black had made me Fuller vice-president and, on that occasion, had given me 1,000 shares of common stock in United States Realty. It was then quoted at thirty-three. Thirty-three thousand dollars was a fortune to me. Black suggested that I sell and put the money into preferred. I did so. It was bad advice. Preferred soon dropped to nothing.

Others in the company fared even worse than I did from Black's tactics. McConnell, president of Fuller, and my immediate superior, seeing the stock going down, conceived the idea of selling short and then driving it down still further. Black apparently encouraged him in this.

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But secretly Black was buying. The stock began to go up. McConnell was cleaned out. Black told me this with a chuckle. It was a good joke.

One of my superintendents who had been doing good work on the Flatiron and other jobs came to me one day and said he was quitting.

“What’s the matter?” I said. “Aren’t you getting enough pay?”

“Sure, I’m getting enough, but every time I get a little cash ahead Mr. Black has some suggestion. Everything I make he takes away from me.”

After McConnell was wiped out, United States Realty went down again and Black again started buying. When he had accumulated a sizable block, he bought out Morgenthau’s interest at something above the market, though much below the subsequent value. Then, combining forces with Stillman, Gates, and Schwab, he seized control. In a stormy meeting he named his own board of directors and a new set of executives. He was president, Flake and Dowling vice-presidents. But the new setup did not last long; Black and Flake and Dowling were at odds. Not long afterward, Black reorganized the corporation, changing its name to the United States Realty and Improvement Company.

I am telling this financial story in some detail for several reasons.

First of all, there is the historical aspect of the matter. This has nothing to do with my particular personal story

at this stage, but it should be mentioned and emphasized. Financial speculation and manipulation have an intimate connection with building in the modern city. Black in his schemes and dreams in the United States Realty in the early years of the century was the forerunner of the great speculative builders who flourished after the World War. Speculative building has virtues and it has evils. The crash of 1929 exposed some of the evils—towering skyscrapers with no tenants and frozen bond issues. But speculative building has also reared profitable skyscrapers that otherwise never would have been built.

Then there is what might be called the moral aspect of Black's methods. They were rather typical of the ethics of business which I encountered in New York in the early years of the century. The prevalence of these methods possibly explains the muckraking era and the reaction against big business that followed.

Finally, there is the effect of these methods on me and my work at the time. When I went out after building jobs I was often turned down cold because of the impression that the Fuller Company was merely the subsidiary of a gambling outfit. This was a new and unpleasant experience to a man who hitherto had been judged solely on his record as a builder, and it put me in a receptive mood toward the proposal which my brother Theodore made to me about this time.

That brings me to the Starrett side of the story.

Already Theodore was the victim of his own terrific

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energy. Though he was only forty, his nerves were shot. The competition for jobs and the speed on jobs—for which he and I were largely responsible—were killing, the more so that our competition with each other was in a certain sense unnatural and unfraternal.

“Look here, Paul,” Theodore said one day, “why don’t you come over and join me in Thompson-Starrett?”

His suggestion hardly surprised me. Maybe I had been waiting for it. I suppose we both had been harboring in our minds in recent years the thought that someday we would combine forces. Besides that, the irksomeness of certain conditions under which I worked in the Fuller Company gave his proposal, as I have said, an especial attractiveness at the moment. As for Theodore, he may have felt that he was failing and needed my help.

“I think I’d like to,” I said quickly.

“Let’s go and talk to Kelsey,” said my brother.

Kelsey was president of the Title Guarantee and Trust Company, financial backers of Thompson-Starrett.

Kelsey seemed quite enthusiastic. The details were to be settled later, but the general idea was that I was to have the same salary that I was getting from Fuller, \$12,000 a year, plus a share in the profits.

When I broke the news to Black, he exclaimed: “Big mistake! You’ll never get along with your brother!”

“Oh, yes, I will,” I said confidently.

“Have you ever been in business with him?”

“No, but we’ll get on all right.”

"You've got a big future here, Paul," said Black.

A few months earlier Black had been trying to get me to retire from the company.

"Yes," I said, "perhaps I have, but I think I'll join up with Theodore."

I had a happy picture of us five Starretts working side by side all through the years to come, a big team, each contributing to make the name Starrett synonymous with good building.

The next day, when I met my brother for lunch, he said: "Paul, I want one thing clearly understood. If you come over with me, I'm the boss."

"Oh, no," I exclaimed, "that isn't my idea at all. We're going to work together. I know just as much about building as you do. In some ways, I may know more."

"You know more than I do?" His eyes flashed, his face flushed.

"Yes," I said, "in some ways I think I do."

Theodore stared at me in amazement. I could see that to him I was still the boy on the Kansas prairie. I was still the kid on the New Mexico ranch to whom he had sent the drawing board and the sketches so that I could prepare myself for a beginner's job under Burnham. He had dominated my three brothers who were working under him, and now he expected to dominate me.

We were silent a few moments. A mental gulf had yawned between us, and it was uncomfortable for both of us to gaze across it.

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"Now about salary—" Theodore began.

At once I whipped up a sharp disagreement on that point. The tentative agreement on salary we had reached yesterday we now both rejected absolutely and emphatically. This disagreement helped us to forget the unbridgeable gulf of temperament, the clash of personal pride.

"Well," I said finally, "I guess we'd better call the whole thing off."

We shook hands on our disagreement, both immensely relieved.

There is another version of this critical incident which has been given some publicity by Louis J. Horowitz. Horowitz, landing in America as a penniless immigrant, had by great native intelligence and energy risen to a rather prominent place in New York real estate and finance, and not long before this Theodore had brought him into the Thompson-Starrett Company to handle its financial affairs. Horowitz has asserted that it was he who conceived the idea of getting me into Thompson-Starrett in order to remove its most severe competitor, telling circumstantially how after long and tireless efforts he induced me to come down one morning to my brother's office and how Theodore rose angrily from behind his desk and told me to get out! This tale was built entirely out of Horowitz's imagination.

Here, again, I was out of a job.

But Black speedily heard what had happened between Theodore and me. He sent for me.

BLOOD AND STEEL



(Harris & Ewing)

MRS. HELEN EKIN STARRETT

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“Paul,” he said, “I’m delighted! Will you come back with us? If you will, I’ll make you president of the Fuller Company.”

So my career as a builder was scarcely interrupted.

From then on the relationship of the Fuller Company with the Realty Company went much more smoothly. I ran the Fuller Company in my own way. Now and then directors of the Realty Company tried to get a finger into our building affairs, but we usually kept them out. I cleared the building company from its reputation of being the tool of a gambling outfit. Now and then Black offered advice or even tried to sway my decisions but he always yielded to my judgment.

I was president of the George A. Fuller Company for seventeen years. In that period we executed building contracts totaling \$368,000,000, and we became, I believe, the largest building concern in the United States. At one time we were doing 80 per cent of all building in New York City. And in that whole period we did not have one lawsuit. I had learned my Macy lesson.

The interesting thing to me psychologically about this abortive attempt of Theodore and myself to join together in building is that afterward we were much closer together as brothers. Our failure to come to terms in a business way seemed to put us on more intimate terms personally.

Two years later Theodore resigned, a broken man, leaving Horowitz in control. He who had set the pace for us all was its first victim.

As I review the next twenty-five years of my life I am struck with the fact that all their events and personalities, their successes and disappointments, had to do with getting the job. I think again of what Burnham told me in his drafting room in Chicago. After all, this getting the job is pretty nearly a universal human problem; a livelihood for most of us depends on it.

In the business of building construction, financial deals help or hinder getting the job. Politicians help or hinder. You shrewdly size a man up, and you win; you mistake him, and you lose. The apt and fit reply brings success and the words that miss mean failure. Genuine friends get you the job, and false "friends" cheat you out of it. Pleased clients speak a good word for you, even put on their hats to go and help you. An unfriendly architect will see that the door is closed upon you.

So I shall next set down some of my experiences in getting the job. I believe that my experiences are fairly typ-

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ical, in the sense that I got jobs in almost every conceivable way.

A large bank and office building was projected in a city 150 miles from New York. The president of the bank was eager for information; I quickly got on friendly terms with him and saw him often. Plans were prepared and invitations issued to four builders, of whom we were one. The bank president told me frankly that the final decision would probably be made by a large manufacturer in town who was both chairman of the board and the largest stockholder. Right there I had a piece of luck. This man was the largest producer of a tool that, as a boy, I used to take down from the shelves of the hardware store where I worked in Chicago.

When I called on the manufacturer I found him in conversation with his son, an active officer of the company. I opened the interview by telling them how I had handled their tools and spoke of their popularity with the trade. I described the look of the package, and asked whether they still used the same package. This started a train of pleasant reminiscence. The manufacturer told me some of his own story, how his tools had been invented and developed. Then I told them of my desire to erect their bank building, relating my experiences after I left the hardware store and how I had started upon building construction.

The competing builders sent in their proposals. After the bids were opened, I called on the bank president.

"You've got the job," he said, "though you were the highest bidder."

"How could that happen with you canny New Englanders?" I asked.

"Well," he said, "the chairman of the board asked me whom I would prefer to build the bank and I said you, but your price was \$50,000 above the next bidder. 'Is his price a reasonable one?' the chairman asked me. I said I thought it was, and he said, 'Give him the job!'"

We got another bank building in a somewhat different way.

One morning, coming into New York on the early train from my home in Jersey, I read the announcement that the East River Savings Bank had bought the northwest corner of Broadway and Reade Street. This must mean that the bank had decided on new quarters. On the way to my office, I stopped to have a look at the corner. Across the street, in the old Stewart Building at 280 Broadway, I saw the sign of the East River Bank. It was long before banking hours, but I thought I would take a chance. It is good tactics to call on a man unannounced. It gives him no time to set his mind against you.

"What's the president's name?" I asked the giant Negro doorman.

"Mr. Ramsey," he said.

"Is he in?"

"I'll see."

He took my card and disappeared. The place was

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shabby, with old oak partitions having crackled glass in the upper half. Over in the corner was an office partitioned up to the ceiling. An irascible voice roared from behind the partition:

"Tell him I don't want to see any blank-blank architects or builders!"

This kind of reception did not discourage me. I got my foot in the door. Behind a desk sat an oldish gray-haired man. He glared. "I don't want to talk to you! Get out!"

"Mr. Ramsey," I said, "I've had a lot of experience in building. It won't hurt you to talk to me. I think I can help you."

He continued to glare, then his manner relaxed. "Sit down, young man," he said gruffly.

We talked for two hours. I told him how I had grown up in an architect's office and knew something of design as well as construction. I described some of the buildings we had built, the problems we had met. He asked me what I thought of the site, what kind of building he should put up. I told him that, since this was a good renting district, he should put up a building with office space above the bank, so that the building would carry itself. He asked me to figure the probable cost of such a building and recommend an architect. I named three.

Ramsey asked those three architects to submit sketches, and during the preliminaries an ironical incident occurred. A handsome water-color perspective by one of them, Francis H. Kimball, especially took Ramsey's

fancy; Kimball, however, had placed on the sketch, along with his own name, that of another architect. This man had represented to Kimball that he had great influence with one of Mr. Ramsey's building committee. Now it happened that this committee member harbored a special distrust of that particular individual, and Kimball lost the job right then and there!

When I made up my figures, based on the plans of the architects who secured the commission, they ran \$150,000 above the estimate Ramsey had given his building committee. I knew they were high, but I had to follow specifications. "What shall I do?" said Ramsey. I had sold him on our services and he wanted to give us the job, but the cost exceeded his budget.

"Give me a letter to the architects," said I, "saying you authorize me to suggest changes in the plans which will not affect the beauty and serviceability of the structure, but will reduce the cost to fit your purse."

To suggest changes to an architect is a delicate matter. Here, again, the builder has to be a diplomat. In my interview with the architects I began by praising the design for its attractiveness and practicability. Then I remarked casually that it was, of course, to the owner's interest to get as good a building for as reasonable a price as possible. We went through the entire plans and specifications. The architects agreed to changes that brought a total cut of \$150,000. We got the job.

Like Frederick the Great, Ramsey loved to have tall

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men around him. In our construction gang on the bank we had a fellow named Pat, a giant even taller than the big Negro who had ushered me into the old bank. Ramsey evidently had spotted Pat for his own. On the day the new bank opened, I was astonished to find Pat on guard in the lobby, resplendent in a magnificent uniform.

Ramsey, like many men noted for quick temper, became a warm and generous friend, once I had gained his confidence. Not long after we completed the bank I learned that Hollenbeck and Hungerford, a large corporation, were planning a new building. I had heard Ramsey mention Hungerford and I dropped into his office to ask him if he would give me a letter to the man. "I'll do better than that," Ramsey exclaimed. He grabbed his coat and hat. "Come along."

We walked up the street to Hungerford's office. "Here," Ramsey introduced, "is the man to put up your building. You can't make a mistake. I've had experience with the other fellows and I know."

We got the job. It ran to \$700,000 or \$800,000.

The Ramsey job was only one of many which we landed by having the courage to suggest changes in the plans.

After the bids were in on the building for the Lawyers' Title and Trust Company I was called down to meet the building committee. As I walked in I saw a shrewd rival sitting outside. I knew it was up to me to act quickly if I wanted the job. The chairman told me I could have the contract if I would meet the low figure. I remembered the

plans. I knew there were many points where we could cut costs.

"Gentlemen," I said, "I will take the job at cost plus 8 per cent, and I'll guarantee the cost will not run over the figure you name, with the understanding that I am to be allowed to make changes in the plans which the architects agree will not be detrimental to the building."

"What about the savings?" said the president of the company, a fine old gentleman named Coggeshall. "Suppose you are able to cut the costs below this figure we have named?"

"You get the savings," I said.

"Wouldn't you like to share them?" said Coggeshall.

"I would like to, yes," I grinned.

Coggeshall turned to Henry Morgenthau, another member of the committee.

"How about it?" he said.

"Give him half the savings," was Morgenthau's reply. "There won't be any."

When we turned the building over to them, we had saved \$78,000 from the stipulated cost plus 8 per cent.

"I'm delighted that you made the money," said Mr. Coggeshall.

A pleasing experience to a builder is to get a job through an architect's recommendation. There are so many possible points of conflict between architect and builder, and the architect so often takes sides against the

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builder, that to have an architect recommend you for a job is deeply gratifying. It was through a distinguished architect that we obtained one of the largest and most exacting contracts in my experience.

Here is the chain of events which led up to it:

In 1908, the National City Bank proposed to erect a building for its own use on the site of the old Custom House on Wall Street. The bank had bought the site and the old building from the government when the Custom House was moved to the new location on the Battery. James Stillman, head of the bank, had commissioned McKim, Mead & White to draw plans. Stillman was the big power in the United States Realty and he swung the contract for the bank to the Fuller Company—the only case I remember in which we obtained a job in this way.

Stillman was a cold proposition. Short of stature, with a narrow face and a stern-set jaw fitted with a close-clipped mustache, he would sit in directors' meetings silent, apparently bored, smoking a cigarette in a long holder. Now and then, his steel-cold, expressionless eyes turned on me and I wondered what he was thinking of me. It was years before I found out.

After I had submitted an estimate based on the architects' incomplete sketches and specifications, and had assured Stillman that we should not go above it, he asked me if we could have the bank ready by the following Christmas. It was now early in January and this left us only eleven months; there was a difficult job of gutting the

old Custom House before we could begin. I told Mr. Stillman that the date was possible only if we sat in with the architect at every stage and he supplied us with every detail as we needed it.

Mead promised that if I would give him a schedule showing exactly what we required and when, he would order his drafting room to come through on the dot.

The stone foundation walls of the old Custom House were tremendously thick, enclosing several great vaults. In one of these I found some curious hand grenades. They were of iron, egg-shaped, with a hole at each end. In one end there was a small plunger, in the other a wooden stick with paper guides like feathers on an arrow. These grenades, when filled with powder, would explode if hurled against the ground or a wall. They were used, I imagine, to protect the building against attack when it was a depository of the United States Treasury.

Gutting the building down to the foundations, we found that these foundations rested on a layer of three-inch oak planks on a bed of quicksand. The planks were absolutely sound and would remain so as long as they were kept wet. I decided to leave them there and build the bank on them. Earlier, I have remarked that sand is an excellent foundation; quicksand is just as good, provided it can't run away. But the building committee, hearing about the old planks and the quicksand, became alarmed. They employed a prominent engineer to examine the foundations. He reported that it was unsafe to let the new building remain on

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those planks and that quicksand, and recommended that a new foundation be designed at a cost he estimated of \$350,000. I definitely opposed this change, and the subject finally came before the building committee of the bank, who decided to allow me to follow my plan. One thing that contributed to their decision was the fact, which I pointed out to them, that the old Custom House placed almost as much weight on these foundations as we would have in our completed new structure.

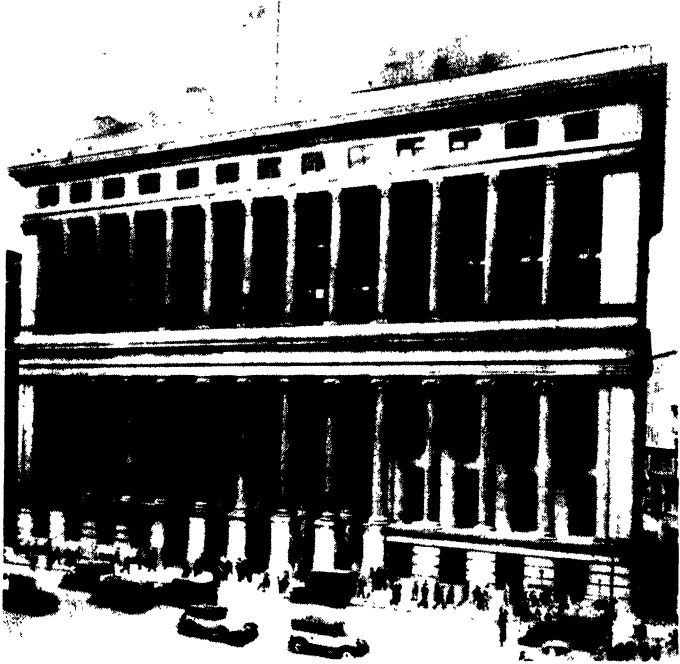
We left the side walls and the old foundations as they were and drove steel sheet-piling clear around the interior to make sure the quicksand underneath couldn't escape, then went ahead. The plans called for four stories of additional granite exterior, superimposed on the old Custom House walls. As we proceeded, I frequently took a check to see if there was any settling as the weight increased. The settling was negligible.

We had the bank ready on time, even though Mr. Mead decided at the last minute that the dome of the main banking room was too bare and made us re-erect our elaborate scaffolding and add a series of decorations depicting the signs of the zodiac around the dome.

Today, after almost thirty years, the National City Bank stands at the precise level where it was when we finished it, as immovable as if rooted in solid rock. It is interesting to know that the most famous bank in the United States is safely floating on a bed of quicksand.

"Starrett," said Mead, when the job was done, "you

GETTING THE JOB



(National City Bank of N. Y.)

NATIONAL CITY BANK, NEW YORK
McKim, Mead & White, architects

are very unpopular with some of our draftsmen.”

“Why so?”

“Draftsmen don’t like to be shuffled around from one job to another. We have been moving men from other work and putting them on yours all through this contract. But as far as I’m concerned, you’re welcome in our office at any time. You get your jobs done on schedule. We please the owner and make more money than with any other builder.”

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Mead's good will bore fruit very soon after this.

The long-cherished dream of the Pennsylvania Railroad to deliver their passengers directly upon Manhattan Island was moving toward reality. The railroad company was driving the tunnels under the Hudson, had cleared away two square blocks of tenements between Seventh and Ninth Avenues, and was blasting the gigantic excavation out of solid rock. They had given Norcross, the New England granite man, the granite contract and a well-known engineering firm had the commission for the structural design, which, in the case of a railroad station, bulks very large in the total scheme. The impression was about that this firm had the contract to build the station, so I hadn't gone after it.

The engineering concern had sumptuous offices with thick rugs and a lot of vice-presidents and, over in one corner, a ridiculously small drafting room where half a dozen graduates of some polytechnic institute were turning out impractical drawings. It was absurd for such a concern to be doing the engineering on a great railway terminal, even more absurd that it should have the job of building the station.

One day Mead called me in to have a look at some of these drawings.

"Mr. Mead," I said, "has this outfit the contract to build the station?"

"No," he said, "nobody has it yet, but I'm afraid they're going to get it."

"Why don't you give it to me?"

"I can't give it to you," he said, "but I'll recommend you."

He sent me to see Samuel Rea, president of the Pennsylvania.

I wonder today at my nerve as I faced Rea.

"What are your terms?" he asked.

"Cost plus 8 per cent on the work we actually execute and cost plus 5 per cent on the subcontracts."

"That's your asking price," he said.

"That's our real price," I said.

I don't remember whether Rea gave me the contract on the spot. At any rate, we did get it in a few days. Rea may have inquired about our work for other clients, but I am sure Mead's recommendation was the decisive factor.

It turned out to be an \$8,000,000 job. A \$3,000,000 job was big for us at that time.

At the outset, no one knew what the exact cost would be. We made an estimate on our work and the engineers made an estimate on the steelwork and mechanical trades. We ran 6 or 7 per cent under our estimate, the engineers 100 per cent over theirs.

The specifications were for pink Milford granite and travertine, that beautiful straw-colored Italian limestone which the Romans used for the exterior of the Colosseum. To make sure that this stone would come through on schedule, we sent our own men to Italy to oversee its quarrying and loading on ships. Raising the gigantic blocks in the

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clerestory was a ticklish job; the wooden scaffold we built for the purpose cost \$50,000.

One day, Mead asked me to have a look at the drawings which the engineers had made for the steelwork to frame the huge train shed. It was frightfully ugly. It seemed a shame to erect such an eyesore as a part of that magnificent terminal.

“Why don’t you redesign it?” I asked.

“We don’t design steel,” he said.

“Well,” I said, “you could make a sketch of how you would like it to look and then get Purdy & Henderson. They’re the best steel designers I know.”

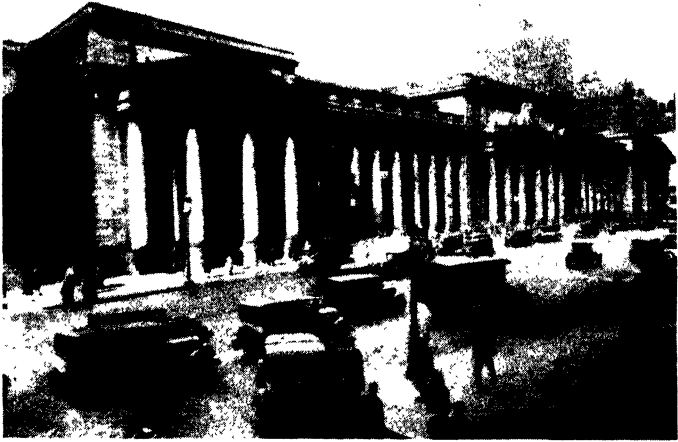
“But what about these engineers? They’ll have a fit.”

“To the devil with the engineers!” I said. “Get Purdy & Henderson!”

Mead did so, and the result was that graceful archwork of steel which has excited the admiration of architects and artists ever since.

When we built the Macy store, we created a strategic and almost historic factor in the business life of New York; now, in the Pennsylvania Station we had built another—and there was an interesting relation between the two.

In discussing the Flatiron Building, I pointed out how the northward movement of business and shopping on Manhattan Island upset our estimates of the future importance of that site on Madison Square. It was true, indeed, that the “center” of New York crept north from



(Pennsylvania Railroad)

PENNSYLVANIA STATION, NEW YORK

McKim, Mead & White, architects

Madison Square to Forty-second Street, but after that its movement slowed down, and the principal reason was the Pennsylvania Station. That station brought about an equilibrium of human activity in the heart of Manhattan Island extending from Thirty-fourth Street to the Fifties. This was a great stroke of good fortune for Macy's. The Pennsylvania Station assured that the largest store in the world would never be left behind by the trek of business.

Our work on the Pennsylvania Station led to another major job—the main New York Post Office, which spans the Pennsylvania tracks just west of the station on Eighth Avenue. Up to this time we had steered clear of govern-

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ment work, knowing from the experience of others that the builder for Uncle Sam was subjected to unreasonable requirements by incompetent, politically appointed inspectors. But on this occasion a friendly official in the Treasury Department, who had probably watched our work on the station and who was responsible for letting the post office contract, urged us to submit a bid. McKim, Mead & White were again the architects. It was obvious that they would harmonize the station and the post office and therefore I confined our proposal to the pink Milford granite which had been used on the station and which was, in general, their favorite stone.

When the bids were opened, it was found that many builders had submitted alternate prices based on cheaper granite; ours was the lowest bid for Milford. We had the architects' recommendation and the competition should have closed then, but our figures, though the lowest, were above the appropriation. This called for changes in plans, to reduce the cost. An Ohio contractor, our most determined rival, brought political influence to bear and new bids were invited with our original figure made public as a target for the others. One alternate suggestion was the substitution of granite capitals instead of marble on the columns in the front façade. The difference in price between marble and granite was slight, but the Ohio builder deducted \$75,000 from his figure, in the event of this substitution. Despite this, we got the job, by the support of the Treasury official who had seen our other work.

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On the station, we had been forced to accept a large number of patched stones; some of the drums in the Doric columns had weathered and the patches became conspicuous. There were also many stones patched on the edges; such patches are called "Dutchmen." These blemishes bothered me. I suppose my bringing-up in an architect's office made me a perfectionist. So, I was ambitious to construct the post office without a single chipped stone. We worked with the greatest care and I was sure of success. Then we discovered one stone in the cornice with a small crack. It couldn't be seen and was structurally harmless, but I gave orders to replace it.

Mr. Mead heard about this and countermanded my order.

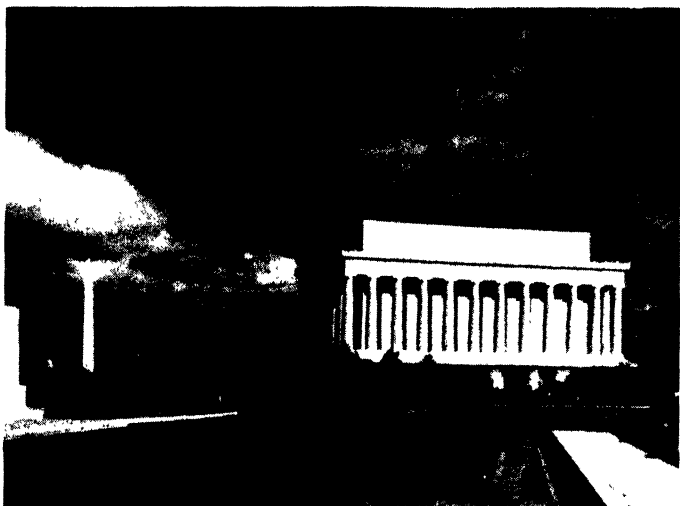
"Starrett," he said, "we've got to get this post office finished! There is such a thing as carrying perfection too far!"

I thought this an interesting statement to come from an architect. Architects are supposed to be the priests of perfection.

That was not the only instance in which we were accused of being too particular.

In Taft's administration, we built the Lincoln Memorial in Washington. The marble specified, known as Colorado Yule, was quarried in the mountains above Denver. The undertaking called for the largest cubic content of marble ever set in a building up to that time. During the early part of the work the Colorado Yule Company went

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(World Wide Photos, Inc.)

LINCOLN MEMORIAL

Henry Bacon, architect

into receivership. It was impossible to match the stone elsewhere, so we arranged with the receivers to run the quarry. We expected a loss on the operation, but we carried the quarrying and delivery of the stone through with some profit to the creditors, though the freight charges alone for bringing the marble to the site were \$246,000.

When we began setting the stone, we were immediately hampered by unreasonable rejections by the government inspector in charge, an army officer. Beautiful big drums for the columns would be delivered and at once condemned. At first we substituted new drums, but these met the same reception. We protested; there was a deadlock. Then it happened that Major Sewell, who for years had

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(Harris & Ewing)

JAMES BAIRD

Vice-president (later president) of the Fuller Company

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been superintendent of all government work, turned up in Washington. Sewell had resigned from the army and become a controlling factor in the Alabama Marble Company. Our Washington manager, Jim Baird, suggested that Sewell be named arbitrator, the government and the Fuller Company to abide by his decision. The government agreed. Sewell made a careful survey of the work. He then said:

“You fellows (the Fuller Company) have done the marble industry great harm. No other marble company from now on can live up to the standards of perfection you have established here.”

We had no trouble after that.

When Ramsey was angrily ordering me out of his office, it would have been hard to predict that a few months later he would cram on his hat and hurry down the street with me to help me obtain another contract. When Henry Frick, the steel man, was savagely ordering me out of his Fifth Avenue house, it would have been equally hard to predict that not long afterward he would help me get the job to build the largest hotel in the world.

My building adventures with Frick were marked by many such tempests, but there were compensations. I gained some new evidence of the perils in lump-sum bidding. I discovered the human being behind the irascible financier, and I was offered a chance to make a million dollars.

Earlier, just when I was starting in New York, Black quarreled bitterly with Frick over the Frick Building in Pittsburgh. Burnham was the architect, and he had made arbitrary deductions of a quarter of a million dollars from our bill. For example, we had been unable to secure a sufficient supply of the marble specified for the corridors and had substituted another kind which we judged quite as good. Burnham knew we were making the substitution and offered no objection when the stone was being put in. Much as I admired my old boss, I thought he was wrong in these rulings. Black sued Frick and obtained a judgment for the entire amount deducted. This completed between Black and Burnham the estrangement that had begun on the Flatiron Building.

I hadn't taken any part in the fight over the Frick Building, and now when I heard that Frick was planning a large arcade building in Pittsburgh, I decided to put in a bid. After the bids were opened, I called upon Frick at his New York residence. He welcomed me by reciting the circumstances of his former experience with the Fuller Company. I told him that he had been misled in that dispute. He himself knew he had the finest office building in the United States. He could compare its cost with other buildings less impressive. He was apparently converted. Then we took up our proposal for the arcade. Frick said that we were not the low bidders.

"Are we not the best builders?"

He seemed ready to agree to this.

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“If you will reduce your bid a small amount, to meet the lowest figure, I will give you the job.”

This was easy to do, so we were awarded the contract.

Obtaining the contract proved a deceptively easy preface. Our relations with Frick were reestablished, but our relations with Osterling the architect became more and more difficult. He apparently had local friends in Pittsburgh to whom he had made promises, and he tried to force us to give subcontracts to these friends, regardless of price.

Osterling owned a sandstone quarry operated by his brother Dan. He insisted upon our buying this stone. I agreed, provided we could do so as cheaply as we bought elsewhere. But the price was 25 per cent higher, which meant considerable additional cost. When we submitted sample stones from other quarries, Osterling acting on his authority as architect promptly condemned them, claiming that they were all inferior to the product of his quarry. He also refused to supply us with the details necessary to proceed. After refusing flatly to deal with him, we appealed to Charles F. Chubb, Frick's representative in Pittsburgh, and later to Frick himself. We won Frick's permission to go ahead by offering to use stone from another quarry at our own risk, and having two or three experts examine it when we had finished. If it was not fully equal to Osterling's product, we would accept any cash penalty Frick might impose. This was a wholly successful move on our part.

We had the foundations in and the steel up to the second story, when Mr. Osterling suddenly altered his design. He persuaded his client to add three stories to the limestone building, and these stories were to be inserted in the middle of the shaft. Chubb reported Frick's approval of this alteration. I asked whether his employer realized the cost, and Chubb replied, "Oh yes, Mr. Osterling has given a price of \$250,000."

I told Chubb immediately that the change would involve twice that amount. It was necessary to reinforce all the columns already erected and also many for the balance of the building, which were already fabricated. Frick's representative was disturbed, but had his orders to go ahead with the work. I told Chubb to telegraph Frick, who was then at Pride's Crossing in Massachusetts, that we would visit him there, and meanwhile drew up an estimate of what the cost would actually be. Frick was very angry when he heard the amount, but chose to proceed.

Frick was a short, stocky man with gray hair and white whiskers and mustache. He had cold blue eyes and a square jaw which indicated determination and power. When in good humor, he was delightful company, but when crossed his temper was unrestrained. He spoke in a low tone; his eyes reminded me of James Stillman, but he differed from Stillman in his entire frankness. There was never any difficulty in ascertaining what Frick thought. Whereas I had respect for Stillman, I really liked Frick. One could weather his tantrums. He was fierce, but always

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fair and open. I would have done better had I trusted him more. He made instant decisions, and his movements were nervous and quick. He kept his word when he gave it.

Osterling spared no effort to increase the cost of the building. He designed an elaborate mosaic ceiling for the main corridor, which had originally been more simply drawn. A decorator, another of Osterling's friends, handed us the drawings, an intricate gold pattern far beyond anything required by our contract. I believe it was inspired by the decorations in the new Woolworth Building, then soaring above New York. We locked horns over this; Osterling charged that we were seeking to evade a requirement, while I indignantly showed Frick that we had received bids based on the original drawings and those figures were much lower. We were willing to allow the highest price among these proposals, but not to pay for the ornament substituted by Osterling, who did not care how much he spent, since our contract was for a lump sum. Frick admitted the justice of our position and agreed to pay the difference for the more costly design. He wanted the best building.

Before the work was finished, I was treated to one of Frick's tantrums. I do not wonder that he became exasperated, for our troubles with Osterling grew worse and worse. One day I called to get help in forcing the architect to supply us needed information. Something had already put Frick in bad humor.

"I hired you to build a building!" he raged. "Go and



(Trinity Court Studio)

FRICK ARCADE—HENRY CLAY FRICK
F. J. Osterling, architect

build it and don't bother me!"

"It never will be built if I don't have facts to go on."

"What? Never will be built?"

"That's what I said."

For a moment he was speechless. Then he pointed to the door. "Get out of this house! Don't show your face here again until the building is finished!"

But I stood my ground. "How in hell do you expect me

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to control your architect if you can't control him yourself? Can't you force him to supply me with details?"

"No! No! I can't! Go on! Get out! Don't bother me!"

I fought down my anger. "Mr. Frick," I said, "if you'll agree to let me go ahead on my own hook, supply details myself if Osterling doesn't, I won't ask for another payment till the building is finished."

A payment was due at the moment, and this proposal to postpone it seemed to cut through Frick's rage and fix his attention.

"All right," he snapped. "Go ahead."

Back in Pittsburgh, I forced the building to completion. When the architect refused us information, I supplied it myself. At the finish there were extra items amounting to over \$100,000 for work not required by the contract, and for which I had no written approval—only Frick's angry verbal authorization. I checked these items with Chubb, we agreed upon the sum due, and I presented this to Mr. Frick at his residence. But then I had an unpleasant surprise. Frick had received a letter from Pittsburgh, and on the strength of it he was not willing to pay my full bill. He was attended by his attorney.

The letter was from a disgruntled superintendent on the job, who was especially unfriendly to Chubb. He stated that he had seen our settlement, and Chubb had committed Frick to considerably more than he rightly should pay. Frick had accordingly deducted several large amounts from our bill.

It was disconcerting and awkward for me. I refused to allow the deductions.

The attorney withdrew to confer with Frick. The lawyer came to the anteroom where I waited and informed me that Mr. Frick was very determined. He would not pay any more than the amount offered.

"All right," I said, but I felt heartsick and was only bluffing. "We'll have another lawsuit, and we'll beat him again!" My hope was that Frick would respect someone who stood up for his rights.

I prepared to leave the house. The attorney detained me. He went back to consult with his client again. He returned and said there was no sign of weakening on Frick's part.

"Let me speak to him."

I was shown again into Frick's office. Briefly I restated our case, reminding him of all that had happened, how he himself had reviled the architect yet had done nothing to help, how we had saved him money, and how he had given his promise, after which we had gone forward without written protection. We had not even made our full profit; yet he had been persuaded by a letter from a disgruntled employee to disbelieve both Chubb and myself. As he listened, I could see a little twinkle in his eye, and I knew I had won.

"I shall have to take something off to show that I was not entirely wrong."

We agreed upon a very minor deduction, and then while

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I waited, he wrote out a check for our balance in full. He shook hands and said that if ever there was anything he could do for me, he would be glad to do it.

At other times, the man was as genial as a summer breeze. I used to time my visits to Pittsburgh to catch him there; almost invariably he would invite me to ride back to New York with him in his private car. Usually, there was a crowd of his business friends along. Once, however, I was the only guest and as we smoked after dinner, Frick said:

"Starrett, why don't you go into the steel business? From what I can see, building must be tough work. You'd do much better in steel."

"I don't know anything about steel," I said. "I've spent my life in building. I love it."

Frick studied me, seemed to see my point of view. Then he said: "Starrett, suppose I told you how to make a million dollars in the next three months?"

"How do I do it, Mr. Frick?"

"When you get to New York tomorrow morning, call up your broker and buy 100,000 Steel Common. You can take ten points out of it in the next three months."

"But I'd have to have a million to margin an account like that," I said. "Suppose it went off two or three points. I'd have heart failure."

"It won't go off to amount to anything," Frick said. "It will go up almost immediately. You watch it, Starrett."

Next morning, I reported this tip to Harry Black. He

was skeptical. "Frick is probably getting ready to unload," he said.

I didn't agree. I was sure Frick had given me the advice out of genuine good will. But Black's doubts made me hesitate and, besides, I was no speculator. I bought 500, with an order to close it out on an advance of ten points net. Steel was then at about 83. It dropped a point or two, then started on a rise that took it in a few months to 129. Later, it went higher.

I have never ceased thinking about that million.

One afternoon, Frick was showing me the art treasures in his Fifth Avenue house—the collection he later bequeathed to New York City. I could not fathom what real pleasure Frick took in these beautiful works. "They *say* that is a very valuable piece," he would remark doubtfully. Was this the limit of his aesthetic appreciation or only an evidence of his modesty? We reached the main gallery, where some workmen were busy making a copy of a large antique table. Frick, deciding that he needed two tables to grace the room, had ordered a replica of the original.

"That is certainly a genuine antique," I said, studying the dark worm-eaten table.

Frick cocked his head and gazed at it. "Oh, I'm not sure. I bought it from J. P. Morgan. *Maybe* it's genuine."

Frick once said to me: "If a man does you an injury, he will always be your enemy."

The converse of this, as I have already illustrated, is:

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Ask an enemy to do you a favor and convert him into a friend.

When, in 1914, I heard that the Pennsylvania Railroad had in mind a great hotel to face the Pennsylvania Station on Seventh Avenue, I remembered that Frick had told me he was the Pennsylvania's largest shareholder. I went to him. "Mr. Frick, will you help me get the job?" I asked.

I had been learning from experience that it was of tremendous advantage all around—to owner, architect and builder—that the builder should be chosen at the same time as the architect, so that he could be in on the plans as they were developed. From his practical viewpoint, he could show owner and architect the way to hundreds of economies.

I told Frick this.

He interrupted me in the middle of a sentence. "You're right, Starrett! Go and see Samuel Rea. See him today. He's in town. Tell him I sent you."

I saw Rea that afternoon. Within an hour, I had the contract.

Our work on the Hotel Pennsylvania brought me together again with my old friend, E. M. Statler. The acquaintance which began in Buffalo had already secured us the contract to build the Detroit Statler and the addition to the Cleveland Statler, and now Statler, having obtained the lease on the projected new hotel of the Pennsylvania Railroad, wielded a large influence in planning the build-

ing. It was he who persuaded the railroad to increase the hotel from 1,000 rooms, as originally planned, to 2,200 rooms, making it the largest hotel in the world at that time—larger than the Commodore, on which we were just then beginning construction.

When we completed the Hotel Pennsylvania, I had the satisfaction of knowing that I had played a part in the creation of a group of buildings which are an essential part of the landscape and life of New York—the magnificent railway terminal, the post office facing it at one end, the towering hotel at the other.

A BUILDER can lose contracts in almost as many ways as he can get them.

When we were building the Brooklyn Union Gas Company's building the architect, Frank Freeman, told me an interesting story about a blunder he had made a few years previously.

A card was handed to him one morning in his office, when he was rather busily engaged. After keeping his visitor waiting some time, he allowed him to be shown in. A portly gentleman in a Prince Albert coat, with a slouch hat—rather carelessly dressed—announced that the front stoop of his residence in the Sixties was out of repair. He wanted Mr. Freeman to make drawings and superintend its reconstruction. Freeman confessed to a little annoyance but told his visitor, rather brusquely, that he would attend to the matter during the coming week. He laid the card on his desk and forgot it. About a week later, the same gentleman called and asked what, if anything, had been done. Freeman, rather impatiently, explained that he had been

very busy and unable to visit the residence, but promised to do so within a day or two. About a week later, for the third time, the caller inquired about his front stoop and again Freeman made excuses and again forgot the matter.

Very shortly thereafter, it was announced in the papers that John R. Hegeman, president of the Metropolitan Life Insurance Company, had awarded the commission of designing his new building at Twenty-third Street and Madison Avenue to Napoleon Le Brun. Something about the name sounded familiar to Mr. Freeman and he hastily hunted up the card which had been submitted to him by his persistent caller. It was John R. Hegeman! By neglecting to take care of this small commission, he had lost the chance of designing the great Metropolitan Life Insurance Building. Hegeman's idea, in consulting Freeman, was to find out how efficient he was in attending to small matters.

In this matter of losing jobs I think my experience is typical, because I have lost them in almost every conceivable way—sometimes through my own bad judgment in sizing up the owner's personality, sometimes because I had ruffled the dignity of an egotistic architect, sometimes through politics, sometimes through straight bad luck.

At times, the salty vernacular I used for driving my men worked very well in a selling talk to an owner. At times, it didn't. When the Central Union Life Insurance Company of Cincinnati projected its new building, the directors commissioned Cass Gilbert to draw the plans and asked the Thompson-Starrett Company and the Ful-

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ler Company to make propositions. Louis Horowitz, of Thompson-Starrett, and I had separate interviews with the president of the company at Gilbert's office. I had what I thought was a very pleasant talk with the insurance man and left feeling that I had made a good impression. But Horowitz got the job. Gilbert told me later that the president had turned me down because of the profanity I used.

We lost the contract for the Sears, Roebuck plant in Chicago because Will Dinwiddie, my brother-in-law, Chicago manager for Thompson-Starrett Company, offered to do the work for a nominal fee of one dollar, the amount of his compensation to be ultimately determined when the work was done. We didn't match this proposal, thinking it was not businesslike. Mr. Julius Rosenwald took Dinwiddie up on his offer and was so highly pleased at the conclusion that he voluntarily paid Thompson-Starrett a substantial fee and presented Will Dinwiddie with \$75,000 dollars in Sears, Roebuck stock.

We lost the Municipal Building in New York because of a subcontractor. This man, John Peirce, a stone contractor who was deep in city politics, came to us and proposed that we combine bids with him. He offered to give us a figure on the granite that would enable us to beat all comers. I was suspicious of him, because he was a close associate of a director in a rival building company.

I told him to bring his figures around and we would consider them.

At the last hour before the bids were to go in, Peirce

turned up at our office with a bid of \$2,400,000 on the granite. This was \$200,000 more than a figure I had.

"Just add 10 per cent to my figure and you'll get the job," said Peirce.

Of course, this was ridiculous. I suspected that Peirce wanted to trick us into bidding too high, so that somebody else would get the contract.

I told Black to hold Peirce at our offices till I got our bid in with the city authorities. But Black misunderstood me and let Peirce slip away. He dashed down to the office of a rival builder and gave them a figure on the granite of \$2,000,000 flat.

The other builder got the job.

As it turned out, Peirce bid too low and went broke on the contract.

The loss that hurt me most at the time was the Woolworth Building.

The rumor had been about for a long time that F. W. Woolworth was playing with the idea of a gigantic skyscraper in New York, to bear his name, and all the leading builders had their ears pricked up. This would be a prize worth fighting for!

I saw Woolworth, who greeted me courteously and, while he listened to me with interest, I got no inkling of what he was thinking. I made it my business to call on him periodically, always near five o'clock, at quitting time, when usually I would ride with him up to his house on Fifth Avenue.

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We learned that Cass Gilbert had the architectural commission. I called on Gilbert and got no encouragement. He said that he had not fully decided on how the building would be erected, that he might carry it out in his own office, letting the subcontracts himself.

Woolworth was a big hulk of a man, well over six feet tall, with broad shoulders and sandy complexion—rather pompous.

He didn't give me any particular encouragement, nor did he discourage me. It happened that his office at that time was directly across from the East River Savings Bank which we were building for Dick Ramsey, and I said to Woolworth:

“You watch that building across the street. See it shoot up! You'll see what speed we get.”

And did we make speed on that job! I gave the building constant, personal attention and we chucked it up at the rate of eight stories a week of five and a half days. Ramsey, who had become an enthusiastic friend, called on Woolworth to tell him what wonderful service I had given him.

Woolworth seemed impressed, but I could never get him down to brass tacks.

I wanted to build the Woolworth Building, but I wanted to build it of stone. I believed that a Gothic cathedral building, such as the design called for, would not stand the rigors of the New York weather. I thought there would

be falling pieces of terra cotta every year—a decided hazard to the pedestrians in the street.

I called Woolworth's attention to the fact that all the great cathedrals which were the inspiration of his building were built of stone. I said that stonework could be so cut and designed that there would be little, if any, chance of the weather's disintegrating his building. If he built of terra cotta, it would look like a five-and-ten-cent store proposition; but in stone it would be magnificent. All this impressed Woolworth.

One day he asked me what my terms would be. I said we would erect the building for cost plus a fee of \$300,000. He thought this was reasonable and told me to see Gilbert and say that he and I had agreed, subject to Gilbert's approval.

I thought I had the contract without any question, when Horowitz slipped it out from under my reaching hands. I gloomily wrote a note of congratulation to him and asked him how he did it. I was to learn how, later on. Woolworth told me Gilbert wouldn't have me.

In after years, the spectacle of the upper part of the Woolworth Building, wired up with metal mesh to catch the falling terra cotta, verified my judgment expressed to Woolworth during my contact with him.

Once I was asked to submit a bid for the construction of a stadium in Columbus, Ohio, where I had many

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friends. Shortly thereafter, the request was withdrawn. This is the way I lost that job.

We had built the physics laboratory at Princeton, a gift of Mr. S. S. Palmer. After Mr. Palmer's death, his son Edgar decided to put up a stadium in memory of his father.

He gave us the contract without competition at a cost limited to \$300,000. The structure was to be of reinforced concrete and we badly underestimated it; particularly on the curved portions our forms proved very expensive. Two other things made the situation worse. The architect was interested in a cement with which we had had bad results. It had been used by a railroad company in building their cut through New Jersey, leading to Hoboken. I had observed this work in commuting from my home in South Orange. The outside surface had shaled off badly, exposing the reinforcing rods. I objected to the use of this cement and wanted to use one of the standard brands from which we had had good results. The architect insisted and I protested in writing. We used the cement on the Princeton Stadium.

Mr. Palmer wanted the stadium ready for the Yale-Princeton game, and in our anxiety to please him we made no objection; this prevented our doing the work in sections and reusing our wood forms on the straight portions. The Yale-Princeton game was held on its date, but very soon after, the cement began to shale off in large areas. We lost \$60,000. Palmer demanded that we repair the cement

work without cost. We refused, pointing to our protests.

The result was that when a building committee from Columbus visited the Palmer Stadium they were informed that the Fuller Company did poor work and would not make it good.

There are jobs a builder doesn't get because he doesn't want them. He knows there will be no profit in the work, only a lot of grief. This was the case with the New York Central office building back of the Grand Central Station, straddling Park Avenue.

One of my first contacts with the New York Central Railroad was when we built the temporary post office on part of the site now occupied by the Biltmore Hotel. Specifications included the stock clause appearing in most contracts of this railroad company, describing the procedure in the excavation when encountering different kinds of material—rock, sand, quicksand, mud, etc. There was a clause stating that borings had been made by the railroad company and that no rock would be encountered. Nevertheless, we struck rock almost immediately. We put in rock drills and started blasting. I sent a memo to the architect, notifying him of this extra work. He answered it was a point to be decided by Mr. Wilgus, chief engineer of the railroad. I said this was all right; I foresaw no trouble, because other owners in like circumstances had always done the square thing by us.

When it came to the final settlement, Wilgus threw out the bill for this rockwork, amounting to some thousands

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of dollars. I had a hot argument with him. Wilgus's claim was that the clause guaranteeing that the builder would encounter no rock was a mere technicality. I told him I would collect if I had to sue. In my anger, I forgot my rule against legal warfare. Black refused to let me sue.

Some years later, a friend asked me if we intended to bid on the New York Central office building. Our experience on the post office, added to some others with the same railroad, had made me resolve never to figure on anything again for the New York Central. I told my friend some of my unpleasant experiences. He stated that his brother was now chief engineer of the New York Central, and he was sure conditions had changed. He made an appointment for me to meet his brother.

In the meantime, we received a formal invitation to bid on the new building, with a form of the contract which the builder must sign. It was an unusual document, containing several clauses that I called jokers, traps for the unwary. I called on the chief engineer and repeated what I had told his brother. A man came in while I was talking and halted beside the desk.

"Never mind," the newcomer said, "go on, I'm interested."

I went on relating my experiences with the company. Every man I came in contact with, I said, was a chiseler; they all seemed to be filled with the spirit of Commodore Vanderbilt as expressed in his "Let the public be damned." The chief engineer was getting badly embarrassed. He

finally made me pause and said, "Mr. Starrett, allow me to introduce Mr. Daugherty, vice-president of the New York Central."

I turned to Daugherty: "Everything I have said goes. We've done a lot of work for you and never made a cent; in fact, we've lost money on everything. In the face of this, you have the nerve to send freight agents to our office to solicit our freight. The particular business you are after now is the stone for the New York Life Insurance Building—700 or 800 carloads. I have taken great pleasure in routing every cubic foot of it over the Pennsylvania. They are a different breed of cats."

TIME is important in building. Equipment is tied up, other jobs wait, tenants are ready to move in, the owner stands on the sidelines counting the days. Speed pleases everybody and is money in the pocket. Speed gets jobs. We Starretts were noted for speed, as I have told you, and it is worth while to explain some of the factors in that speed.

The first is the builder's organization. On each job we (and this is true of any large modern builder) place a superintendent long in our service. Under him are a production manager; a construction division with foremen on steel, masonry, concrete, carpentry; an expediting department; an inspection department. The quality of the key-men in this organization is vital. One of the most necessary requirements in the head of a building company is to be able to size up men.

The builder must have lieutenants with judgment, executive ability, and the readiness and eagerness to learn. Sometimes, a man with long experience is not so good as

a man with brief experience. The one may be a good man, but past his prime, unable to adjust himself to changing conditions and new circumstances. The other may have it in him to take on bigger responsibilities than he has ever assumed. Above all, adaptability is essential. Every building job is different from every other, just as every battle in a campaign is different. Nothing is standardized in the building business, and the human element is larger than in any other modern industry.

When we start a building we draw up a schedule, giving the time allotted to each branch of the work, with starting and completion dates, and showing how the time for each trade interlocks with other trades. This schedule is both written and graphic; often it is supplemented with detailed schedules, showing what is required of each trade on each floor in each week. Subcontractors and manufacturers are required to carry on divisions of the work to fit these schedules.

The expediting department has the duty of following the manufacture of every item and seeing that it progresses at a rate which will bring it to the site on time.

The superintendent has an important assistant called a job runner. This man keeps constantly in touch with the architect and his engineering consultant. He secures and distributes all plans and specifications. He checks changes of any sort, notifies everybody affected by them. He carries on all negotiations with subcontractors after the original contract is signed. Through the expediting department

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he keeps tab on the progress of manufacture of materials.

Daily reports give the previous day's labor production in each important trade, the average daily production to date, so that the head office may know how its actual labor costs correspond with the estimated cost.

Now, consider materials—steel, for example. Steel is usually manufactured in the Pennsylvania mills and, if destined for a New York building, is shipped after fabrication to a point in New Jersey across the river from Manhattan. There it is sorted out and is brought across the river on lighters in the order required. But if 5 per cent of the steel for the first story is missing, the whole building is held up. The car containing that missing steel may have been sideswiped or have had a hotbox or broken a coupling and been set out somewhere on a siding and forgotten. Often we have to go out and search for missing cars ourselves. Our man might find that a train composed of a certain number of cars had left Pittsburgh and only a part of the cars had reached Altoona. His job would be to go along the line, riding perhaps in cabooses, searching all the sidings for his missing cars.

You remember how, in my first building in Baltimore, I used the device of writing ahead for my steel long before it was needed, then writing again, with the result that I got it on time. Later, I found that this didn't always work. I had to go to the source. For example, when we were building an addition to the Trinity Building in New York we had a very short time for completion. We had bought the

steel and had given a time schedule. We were assured that we would get it on this schedule, but I wanted no slip-ups. This steel was to be fabricated at the American Bridge Company shops at Ambridge. I got on a train and went to Pittsburgh. I told the manager I had come to check on our steel.

“Oh,” he said, “it will come along all right.”

But I said: “Let me go out to the shop and see this steel.”

He said, “All right,” and I went out to the works. There was a man named Cadmus in charge and I showed him the schedule.

“That isn’t right,” he said. “We can’t touch that. You can’t get that steel till two months after that date.”

I went straight back to Pittsburgh and told the manager what I had learned at the works.

“Oh, that’s all wrong,” he said.

“The hell it is,” I said. “They say they can’t touch that schedule.”

“Well,” he said, “if they say so, then you can’t get it.”

“I’ve got to get it,” I said, “you take that steel out of that plant and give it to some shop that *can* do it!”

So they took the steel out of Ambridge and gave it to the Carnegie Works at Homestead. We got deliveries on time, but we never would have if I hadn’t gone after it.

That is an example of how the builder has to watch his sources of material.

Now let us look at the subcontractor as a factor in speed.

In my early days, many contractors did most of the

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work on the building themselves. As time went on and buildings grew larger and more complicated, and subcontractors became more competent, the tendency was to let out a good part of the work on subcontracts. Many of the subcontractors had developed a high degree of specialization and could do better work in their particular fields than could the general contractor.

Since the subcontractor plays so large a role in the execution of a job, we have always felt that it was essential to treat him as fairly as we expected to be treated by the owner, for self-protection, if for no other reason.

On the Pennsylvania Hotel our contract for the steel with Post & McCord, steel contractors, was only a memorandum on a visiting card. They had done one-third of the work and spent probably \$200,000 before the formal contract was signed. An unscrupulous builder might have said that those were not at all his understandings about price and Post & McCord wouldn't have had a leg to stand on. But they knew that they could trust us.

There are builders who will call in a subcontractor and say, "Smith, another firm has underbid you. We'd like you to have the work, and if you will meet the low figure, you can have the job." If Smith is desperately hard up for work he may say Yes and then try to substitute inferior material to break even. Squeezing a subcontractor in this way is a disservice to the owner. He has to live with the building, and if the job is shoddy the upkeep will become ruinous after a few years.

Of course, this particular owner may never be in the market again for a building, so that the shoddiness may not tell against you in getting later jobs, but it will bother your conscience if you have an instinct for good work. And the squeezed subcontractor will be no friend of yours from that time forth.

Subcontractors must work in proper sequence. Delay in metal lath holds up plasterers. Delay in "roughing," that is, the plumbing pipes concealed in walls, holds up plasterers, too. Plastering delay holds up carpenters, and so on. To assure proper sequence and stimulate speed, we started the practice of weekly meetings of the subcontractors, presided over by the superintendent or the job runner, and often attended by an executive of the company and by a representative of the architect. Everybody reported on progress. Laggards had to account for themselves. Jones, the plumbing man, says that a strike is holding up his supplies. "When will you get them, Jones?" "Next Wednesday, sure," says Jones. If, by next Wednesday, he hasn't got his stuff, additional pressure is put on him. The pressure is largely psychological. He is ashamed to face the meeting and admit he has not made good on his promise.

"Jackson, what about those stairs? Why haven't you got them up?" "I haven't got the drawings yet," says Jackson. The job runner turns to the architect, who sits across the table. "Listen here, Mr. Designer," he says, "we agreed to build this building in eight months, how can we do it if we don't get the drawings?" "Well," says the architect,

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"Mr. Owner says he wants to make a change in those stairs, but I can't get him to make up his mind." "He'll *have* to make up his mind if he wants his building on time!" says the job runner. "All right, I'll get after him." "When will you have the drawings?" "By the twenty-sixth, sure."

So that date goes down in the record, and it is amazing how quickly the twenty-sixth comes around!

In almost every building there are changes. A builder tries to anticipate them. Owners change their minds. Architects change their minds. Even in building a dog house, as one of our men said, you find you have to make it larger because the dog's tail is longer than you thought it was. And in the matter of changes is another place where the builder can hold or lose the good will of his subcontractors, with an ultimate effect on speed, either on the present job or another job.

The architect puts in a partition or a closet not provided in the original plan. It has to be plastered. The superintendent tells the plasterer to go ahead and do it. "We'll make it all right," he says. "We'll fight it out with the owner and get an allowance for it." And we do. But an unscrupulous builder might say afterward, "I never ordered you to plaster that closet," and the plasterer would have no comeback, only the superintendent's word. If ever such a situation arose again on that building, or on another building, the plasterer would say, "I'll wait for my written order." The completion of that job would be in jeopardy.

Thus, keeping faith with the subcontractor is another way to get speed.

True enough, speed may sometimes eat up profits, instead of making them.

When we built the Commodore Hotel in New York we were supposed to have twelve months for construction after the owners, the New York Central, had finished the rock excavating. But the railroad miscalculated and we didn't get possession of the site till three months after the promised date. This left us only nine months in which to build the hotel complete. There was a clause in the contract providing a bonus of \$1,000 a day for completion of the hotel before the required date, and a penalty of \$1,000 a day for running over the deadline. We had been assembling material and we plunged ahead and worked furiously. It was an eyelash finish.

The day before the formal opening we had the Palm Garden full of scaffolding; the decorators worked till midnight. But in the morning everything was cleared away. The hotel opened shipshape. A friend of mine called on me and said he had just left the hotel, where they were "finishing the hotel and opening oysters."

Having finished our contract in ninety days less than the allotted time, we anticipated a \$90,000 bonus. But the railroad claimed that a day meant only a working day, and it counted Saturday as a half day, though we had worked all day Saturdays, Sundays, and nights, spending large sums on overtime. We argued, but the railroad was

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arbitrary, and we submitted to their interpretation, in pursuance of my rule of avoiding legal combat under all circumstances. Our bonus was only \$68,000, and it was our entire profit on a huge contract.

This was an exception, however, and is no criticism of speed, as such.

TWICE, we went outside the field of building construction—once into subways, once into ships. You might assume that subways, a part of the fabric of cities, and involving excavation, just as do buildings, wouldn't be much of a problem for a builder of skyscrapers, and that ships, being of a different world entirely, would give a builder a bad headache. But, in our case, just the reverse was true. Subways were the real headache, and ships, oddly enough, brought us some genuine satisfaction.

Frank A. Vanderlip and "Big Six" Kinnear got us into subways. Vanderlip, ex-journalist and former Assistant Secretary of the Treasury, was rising to power in the National City Bank and had become a director in the Realty Company. And Kinnear, who had been chief engineer of the Michigan Central and had gained a great reputation for his work on the Detroit Tunnel, was now president of the Realty Company. I was told that Kinnear would get us a lot of work with the railroad companies. I doubted it.

After Kinnear had been in office for some time without

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bringing any business, the directors became restless and prodded him into action. New York was just then going in for a new set of subways. The popular impression is that subways are a contractor's road to wealth, and Kinnear, being under pressure, proposed that we go after some of the work on the new Seventh Avenue line. He would get the contract and we, in the Fuller Company, would do the work.

At a directors' meeting, Vanderlip came in with great fuss and feathers on the subway idea. I was violently opposed. I said it was a political job and we knew nothing about the work. I had seen the price for the excavating work and it was entirely inadequate. We have our hazards in building construction, I said, but they are nothing compared to shoring up streets and buildings, taking care of traffic, trolley slots, sewers, electric conduits, etc. The prices that contractors were bidding on this subway work were actually below what we got for excavating a basement where none of these other factors came in.

But at the meeting I didn't come out so strongly as I did later when talking to Black. I said to Black: "As far as Fuller is concerned, we will have nothing to do with it; keep out of it or you will lose your shirt."

Black said: "We'll try one."

But I said: "No, let Kinnear do it."

At another meeting, Vanderlip sneered at me and said: "If you haven't the guts to do it we'll get somebody else."

I said: "Go ahead."

So Kinnear took a contract for one section.

Black came in and showed the figures to me. He said: "Look them over. What do you think of them?"

"What I always thought," I said. "It's a crazy proposition to go into subway construction at all."

He said: "Well, we are in this thing and Vanderlip is an important man. We'll do this one and not take any more until we have tried it out." Black then went to Europe. But Kinnear had already put bids in for two other sections on the Seventh Avenue line and got them. So he had three sections of the subway at these horribly low prices.

A political contractor who was in with Tammany could get extra allowances and probably pull through handsomely; but we had no such political relations. My impression always was that the fellows who made money on subway work in New York were those who had hidden connections with city politics.

Kinnear organized a separate construction unit and went ahead with the subway work. Immediately, he began running badly behind. Having to take care of the shoring and bracing and the obstacles in the street, he wasn't getting one-half of what he paid out. As the cost mounted, Black, who had returned from Europe, said to me: "What do you think?"

I said: "Just what I told you."

But Kinnear repeatedly asserted that they were doing the most difficult parts now and they would make it all up later.

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Black wanted me to take hold and I said: "Take hold, nothing. I advised you that it was against my judgment to go into it. You can't hook any of it on me."

Finally it got so bad that it became an issue with the Board of Directors and they hired Jacobs & Davies, who were the engineers for the Hudson Tunnel Company, to go over the work and make a report to the board. The report said that, while Kinnear might not make the expected profit, he probably would come out even. Black showed me the report.

"I hope you're right, but I don't think so," I said.

Things got worse and worse. Black finally said: "You have got to go over this thing and tell us where we will land."

I took one of our best estimators and a stenographer. We went down into the subway, made notes, interviewed all the foremen and found they had their pockets stuffed full of bills that had never been turned in. After working two weeks on it, I reported that they would lose \$3,000,000 on the three sections. But before putting in this bad news, I went to Kinnear: "Look here, Mr. Kinnear, I want to show you these figures. If you can point out where I am wrong, I'll be glad to change my figures."

Kinnear's face went white: "It can't be as bad as that." I waited a few minutes to give him a chance to criticize my estimate, and then he said: "I don't know but what you are right; you better turn it in."

When I put the report in to the board, they were badly

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(Blank & Stoller, Inc.)

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disturbed. I was sorry for Kinnear, I liked the man. I was asked if there wasn't some possibility of salvaging some of the loss. I said perhaps \$100,000 and this was the approximate result.

So, instead of making \$800,000 on the subway jobs, as Kinnear had expected, the company lost about \$3,000,000. The result was a narrow escape from receivership. Luckily, the directors called in Charles E. Mitchell, then head of the National City Bank. Mitchell did good work in straightening out the affairs of the United States Realty Company. He was like a wholesome breeze blowing across a miasmatic swamp. Two other things worked to save the United States Realty. Property values began to go up, shortly afterward. Furthermore, we in the Fuller Company were busy on several large construction jobs that brought in good profits.

Kinnear told me he was glad the uncertainty was over. He wasn't entirely to blame. He had got himself into something he didn't know anything about. But corporations don't forgive mistakes that cost \$3,000,000. Kinnear was asked to resign.

Ships were a different matter.

This was during the World War—and the ships were for the Emergency Fleet Corporation. But I must lead up to the story.

My brother Bill had been called down to Washington and put in charge of several hundred million dollars of

cantonment work, with the rank of Colonel of Engineers. I wondered whether I could properly go after contracts given out by my brother. I went to Washington and put the question to Newton D. Baker, Secretary of War. He said he saw nothing improper in it, whatever. The only question was who could do the work most rapidly and efficiently. I got several contracts, among them, Camp Funston, the Marine Base at Quantico, the Marine Base at Paris Island, the Army Supply Base at New Orleans, and a number of minor operations.

My brother's department had wisely fixed a uniform rate of compensation for contractors. In making out his bills to the government, the contractor was not allowed to include his overhead. The maximum commission allowed was 5 per cent, no matter how large the job. Some builders strenuously objected because larger fees were being paid in other departments of the government. The government was to supply all money for carrying out these projects and no contractor was to be called upon to use more than a small part of his own capital. On Camp Funston, one of the smaller cantonments, costing between \$4,000,000 and \$5,000,000, we paid out over \$700,000 before we received any payment from Washington. We borrowed the money from the small Kansas banks; from one bank we got the entire sum it was allowed by law to loan. Incidentally, I had a special sentimental pleasure in getting the contract to build Camp Funston, because father and mother had known Fred Funston as a boy in Lawrence.

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The government fixed wages, too.

In New Orleans, where we were rushing an army supply base, we hired mostly colored labor and were proceeding with all possible speed when an agent from the Labor Control Department appeared one morning and ordered us to raise the hourly rate for common labor from fifteen cents to thirty-five. The Negroes, who had been working very faithfully the entire week, could now make as much in half the time; henceforth, they would work only three days a week. The other three days passed in celebration. For the average laborer this meant buying a pair of shoes and a chicken. The following Monday our force would reappear, the uppers of their shoes slit open. Invariably they bought shoes that were too small. The next week saw this performance repeated. We must have proved a great boon to the shoe dealers in New Orleans.

There are two things in our adventure with ships that are of interest, I think. One is that the same principles we had learned in the building of skyscrapers applied to shipbuilding. Organization of men, esprit de corps, and control of materials produced speed and efficiency in shipbuilding, precisely as in other fields of construction.

The other important thing in our shipbuilding adventure is its amazing record of official interference and incompetence. I often wonder whether the official mind is inherently incompetent. Will this same incredible incompetence and bungling occur in another national crisis?

The war had virtually halted private building construction. Beyond cantonment work there was little to engage our organization, so naturally my mind turned to the possibility of ships.

We had been offered a contract to build wooden ships, but I was not interested. The plans were impractical. Then, one day, a young naval architect named Whittlesey appeared in my office in New York stating that he had virtually negotiated a contract to build some steel ships at Charleston, South Carolina. Whittlesey had conceived the idea of building fabricated ships, in which the ribs and platework would be largely fabricated in steel mills and shipped to the plant ready to be incorporated in the ship. Whittlesey's idea was to eliminate a large percentage of the bent work by using angles at the intersections, instead of curves. He proposed to me that we undertake the contract with him on a basis to be agreed upon. We were to furnish the financial standing necessary to close the contract.

At this time—July, 1917—Charles Piez had been appointed vice-president and general manager of the Emergency Fleet Corporation. I went with Whittlesey to call on Piez. I found him approachable, with practical ideas about the job. He referred us to Admiral Bowles, who at that time passed on all the government's ship construction. Bowles was a cold customer. He listened to us with a stony glare. He said this new type of ship was an experiment and this was no time for experiments. Whittlesey had a

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great many arguments, to all of which the Admiral objected. At the close of the second interview with Admiral Bowles, he said to me: "If you are capable of building ships, why not build real ships and not a mongrel type such as Whittlesey proposes?"

"All right," I said, "give me the job to build some."

But the Admiral seemed to doubt somewhat that I, as a builder of buildings, could build ships. Meantime, I thanked Whittlesey and told him I was afraid I couldn't do anything more for him. A few days later, I had another interview with Bowles. I told him that our immense experience in handling and putting together steel structures bore directly on our ability to build ships. Ships were actually simpler than skyscrapers. There were no traffic problems, no foundation problems. Essentially, a ship was simply a steel building, built horizontally and not vertically, out in an open field.

I suggested that he give us a contract to produce the number of ships which had been discussed with Whittlesey, but to build them according to his (Bowles's) ideas. All this time the Admiral gave no indication that he was even interested. At the end, however, he pressed a button and called in his assistant, Mr. Radford. "Tell Radford what you have been telling me." I repeated my story to Radford. The Admiral said, "What do you think about this, Radford?" Radford replied, "I think he can do it." The Admiral said, "So do I," and we were on our way.

But before we got started, there was a ticklish incident.

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An old acquaintance, a physical trainer, spoke to me about an unemployed friend who needed work. I told him to send the man around. A day or so later, a man I will call Murphy appeared in my office, a sandy, heavy-set Irishman. He told his history. He had resigned from a Newark newspaper after a fight with the editor. He said he had been active in the campaign to elect Woodrow Wilson to the governorship of New Jersey. He said, too, he was an intimate friend of Tumulty, White House secretary. A neat man—his shiny clothes were clean, but his collar was badly frayed. He got my sympathy by telling me of two sons, one of them a cadet at West Point.

I promised to file his name. A few days later, a friendly architect telephoned to me that his firm had the commission for a housing project at one of the shipyards. It was a hurry-up job. He urged me to go to Washington. Perhaps we could get the contract, which would run to about \$200,000. I was busy and did not want the work. But I appreciated the architect's courtesy and didn't want to disregard it.

Just then Murphy turned up. I told him here was a chance of making \$1,000, if he would go to Washington and successfully interview Roger Flannery, in charge of the division handling this project. He irritated me considerably by objecting to the sum I was to pay him for getting this "large contract." I explained that the government limited the builder's profit to 5 per cent, out of which came overhead and general office expenses; 5 per cent of

\$200,000 was \$10,000, and his commission would be 10 per cent of this. He asked for a memorandum as a guarantee. I handed him my card with "*one thousand dollars*" written on it.

On my next visit to Admiral Bowles, who had become more friendly, he asked with sudden bluntness whether I had promised anyone 10 per cent of any order he got for us from the government. I had quite forgotten Murphy. I was mystified. I said I had made no such agreement. He said: "Unfortunately, a letter has come to my office from a high source, stating that you have that understanding with a certain politician. You'll have to clear this up before we can go further."

The shipbuilding contract was one involving millions of dollars. I left the office in consternation, when I suddenly remembered Murphy. I went back to New York and summoned him. Had he made any such statement? He first denied it, but then admitted that he had called upon Joseph P. Tumulty and might have given the President's secretary the wrong conception of his mission from me.

The only thing to do was to take Murphy to Washington and have him retract in Tumulty's presence. Murphy didn't have the card, but he agreed to get it and meet me in Washington the next day.

We met at Tumulty's office. The bald secretary, his manner somewhat forbidding, was ostentatiously busy with his morning mail and kept us waiting; he was dictating notes of advice to the President, and each he began

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with the salutation, "Dear Governor." My nervousness increased as we waited. Finally Tumulty turned to us. I stated the facts, which Murphy corroborated. Tumulty agreed to withdraw his letter. I passed an uncomfortable night fearing that in the rush of other matters Tumulty might forget. But when I called on the Admiral early the next morning, he greeted me with a smile and said we could go ahead.

This did not conclude the incident. Perhaps a year later, Samuel Untermyer telephoned and announced that he had a client who was going to sue the Fuller Company for a 10 per cent commission on our shipbuilding contract. I told Untermyer that his client was misrepresenting facts and that no such agreement existed. Untermyer said that he had seen documentary evidence. I asked for an appointment and saw Untermyer that afternoon. He spoke of a card which he had seen with "ten per cent" written on it, and what did that mean? I went over the story with him. He was quite satisfied and broke off with Murphy. Murphy had given Untermyer a photostat of my card on which he himself, I fancy, had added the "ten per cent."

We built ships!

But first we had to build a shipyard. The site finally selected by the government was not at Charleston, but on the Cape Fear River, three or four miles below Wilmington, North Carolina. As negotiations progressed, I had been forming an organization to carry out the work. We

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set up the Carolina Shipbuilding Company, a Fuller subsidiary, with Lorenzo C. Dilks as president. I had known Dilks for many years in responsible positions in the steel industry and had confidence in him; he was an expert on all steel problems. As vice-president, I selected my brother Ralph. He was a loyal lieutenant of Theodore until the latter's death. Ralph had a superb gift for handling men, and had also shown exceeding ingenuity of his own in handling difficult construction problems. Our problems at the shipbuilding yard gave him a new field.

The site of the shipyard was two miles from a railroad, and the nearest highway was a half mile away and not fit for trucking or for a large volume of traffic. The ground was rolling and covered with trees, save for about a half acre of clearing. We cut down more than 2,900 trees of six-inch diameter or more, moved more than 140,000 yards of earth in grading. We built a railroad spur, two miles long, from the shipyard to a junction with the Atlantic Coast Line Railroad for freight, and to a junction with the Tidewater Power Company for passenger service. We operated our own locomotives over this spur, handling all freight and empties. We built a concrete highway more than one mile long, connecting the shipyard with one of the main county roads. The local streetcar system was extended.

Plans and drawings for the plant structures and for the ships were begun, tools and equipment selected, and orders for them placed; the shipyard area was fenced.

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Piles were driven. Construction work started. By July 1, ten weeks after we started, the administration or general office building was completed and the general offices were moved from New York.

Shortly after that the mold loft building with a clear, unobstructed floor 80 by 252 feet was completed and the work of that department was begun, with only two experienced men. Rapidly following came the powerhouse, fabricating shop for hull material, machine shop, storehouse, first-aid hospital, the shipways with their derricks and other rigging. During this time the railroad tracks of the yard and the highways in the yard had been built and vast storage yards for materials and equipment completed. Locomotives and locomotive cranes and other tools were secured, even though deliveries of all these articles were restricted by war priority orders.

Not long after midsummer our mold loft was turning out molds and templets. Hull steel and other materials had begun to come in. In the fabricating shop we were laying out, punching, assembling, and riveting, while the very difficult and highly specialized work of heating and bending shapes and plates was going on. The power plant for transforming electric current was in operation. The permanent air compressor plant was nearly done. The water system, including a huge elevated storage tank, was finished. The pipe and pipe-bending shop, outfitting pier and basin, including a fifty-ton crane, were ready. During this time, too, we had built a restaurant and a dining hall

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to feed our 2,600 men, and a hotel, since many of our employees came from distant points. Wilmington, a city of 30,000, could not supply the labor we needed. Besides this, we had to compete with a local concrete plant for power and workmen.

Our locomotives and crews hauled as many as 233 cars a month, more than 4,000 cars during the period of operation, and we paid demurrage bills on only two cars. By the end of the first year, we had already driven some 700,000 rivets in the ships standing in the ways. The natural slope was utilized so that materials could be placed on small flatcars run by gravity direct to the derricks.

We had first been told to prepare four shipways, then an additional two. Next we were told to return to the original four. These reversals in plan caused extra expense. Despite this, and the bureaucratic interference of which I shall give a few examples, our whole plant cost only \$2,282,000, or \$570,500 per shipway. Piez afterwards informed us that this was much less than the cost of any other shipyard built for the Fleet Corporation and the only one built within the estimated cost.

We had to deal with the severe influenza epidemic. We also had to deal with government inspectors. Both were demoralizing, yet we survived both. I think the second handicap was the worse.

While we were building camps, we had found out again how costly was anything conducted by a bureaucracy. We had proved to the government that we could purchase

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lumber more cheaply than its central purchasing bureau; we had found that government timekeepers and material checks were consistently inaccurate; on one occasion a \$25,000 bill had been approved and paid twice, and the loss charged to us. To the government's credit it must be said that we encountered no evidence of crookedness at any time; delays were often the result of excessive caution. But the incompetence and arrogance of petty bureaucrats threatened to stop our whole progress. The saving fact was that individual enterprise battled bureaucracy and beat it.

Our shipbuilding contract was based on the use of plans from which the Federal Shipbuilding Company was at that time building ships for the Fleet Corporation. These plans were adopted because they were supposed to be complete in all details. The Federal Company had practically finished several ships, but in spite of the most persistent efforts on the part of Piez and ourselves, we never did succeed in getting all the plans and specifications. By June, we decided to make our own drawing and details. Our organization included Eads Johnson, a naval architect, under whose direction we supplied the missing data.

Our specifications fixed every detail, every piece of machinery, the size and location of all piping, the type and capacity of boilers. When Piez handed us our contract, we found that it called for a guarantee of the ship's speed at ten and a half knots per hour, with a bonus and penalty. Since the design of the ship in all particulars was

entirely beyond our control, I could not see why we should be held responsible for its speed. I told Piez so. "You're dead right," he said. He cut the clause from the contract.

But the fingertips of the government were far removed from its head and heart. When the government inspectors descended on us, we met at once the same officious incompetents that we had encountered when building the post office in New York and the Lincoln Memorial in Washington. By the middle of October, we were visited by the district manager of the Middle Atlantic District, Joseph T. Martin. It was soon clear that Martin, accustomed to inspecting work for the government in the big shipyards, came prepared to condemn everything we had undertaken. He announced before he saw our plant that he did not believe "hod-carriers" could build ships. He found fault with all our plans and ordered changes we refused to accept unless he confirmed them in writing, a request he denied.

His subordinates followed his lead. One condemned our outfitting pier as inadequate. We showed that the pier was quite equal to our needs; he refused to listen to us. Although our plans for the ways had originally been approved by the general offices of the Shipyard Plant Division, we were told to make alterations that would seriously add to the cost, but would be no improvement.

Finally, Martin brought in James French, Chief Surveyor in the United States and Canada for Lloyd's Registry of Shipping. He identified Lloyd's as the court of

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last resort on all shipping matters and called upon Mr. French to justify the complaints against us. After full inspection and investigation, the Lloyd's man expressed his satisfaction with all of our work and declared that we had been hampered and put to additional expense by absurd official requirements. As a remedy, he suggested that the Fleet Corporation inspectors discuss all changes with the Lloyd's surveyors on the job, and that only the Lloyd's surveyors should deal with us.

Martin next appeared with the district comptroller. They overhauled our books and denounced all our book-keeping and cost records, despite an agreement at the start on how these records should be kept. To change the system of accounting on a \$22,000,000 operation, several months under way, would have resulted in confusion and more unnecessary expense. The comptroller didn't care to understand any system of accounting other than his own. We were stubborn in our stand that our accounting system had been properly authorized.

The first ship was finally ready for delivery. Martin subjected it to a final examination and disapproved of some wood panels in the officers' dining saloon. The specifications had called for oak panels and we had made an attractive job, using tongued and grooved quarter-oak wainscoting inserted diagonally; Martin condemned the whole ship because he said our wainscoting didn't fit the specified description of a panel! This was in the dining saloon of a wartime freight boat. After delaying for ten

days the delivery of the ship, he ultimately decided that we must remove these panels and replace them with plaster board grained to imitate oak!

The front of the wheelhouse was built flush on the bridge, without a passageway forward of it. Again Martin objected. He declared that this was no way to build a ship and insisted that we should know better, no matter what the plans showed. "There should always be a bridge passageway in front of the wheelhouse!" His chief inspector, our naval architect, and Mr. Dilks were ordered to make a trip to Baltimore to look over some ships at Sparrow's Point. The three men went, and to Martin's considerable discomfiture they found that the Bethlehem ships were identical with ours.

After this, Martin accepted the ship but told us exultantly that we were not through by a long shot. We had to undergo the speed test, and if the ship didn't make ten and a half knots per hour we would really be "in dutch." We replied that we hoped our boats would meet every test, but that we were not financially involved under the terms of our contract. When Martin learned that this clause had been stricken out, he accused us of deceiving Piez. Fortunately, the ship exceeded ten and a half knots and Martin hadn't a leg to stand on.

Besides Martin, we had to contend with another government overseer, F. T. Vermillye, who at his second or third visit to the yard went to Dilks and with a great show of secrecy told him that he had just found a number of

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wood liners in our hulls. He declared that there were some in each one of the hulls. Liners are wedge-shaped pieces of wood used to fill gaps in the seams of lapping plates. The use of wood liners cut the cost, but the practice was a bad one, not to be tolerated by any honest management. At Vermillye's insistence, our works manager and naval architect were summoned. In their presence Dilks told Vermillye to point out all the wood liners he could find in place in any of our ships; we would pay him \$500 in cash for each wood liner he showed us. He didn't find any.

On one occasion we were honored by a visit from Josephus Daniels, Secretary of the Navy. In his train was a strikingly handsome young man who was identified as the Assistant Secretary, Franklin D. Roosevelt. Beyond remarking on his good looks, I paid little attention to him. The position of Assistant Secretary was usually a soft political plum and I doubted whether its holder was a man of any great importance.

Shipbuilding had some surprising compensations. In some respects not even a skyscraper was a product as satisfactory as a ship standing high in the ways—a dry, clean operation. No quicksand, no foundation problems, no worry about breaking telegraph wires or protecting adjoining property. No jockeying of material up narrow streets to the site. Save for the inspectors, nothing interfered with a full play of ingenuity in designing the best equipment for handling material. The ship was ready for launching! There was the fanfare of the crowd, the officers

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in uniform, the pompous speeches, the white-gloved ladies with champagne bottles, the beautiful ship sliding down into the water. And at our yard every ship was sent spinning down the ways within five minutes of the time set. Then the band played.

On Armistice day, we had eight ships completed or in process and were ready with the material for the other four. We received an order to cancel the unbuilt four. The government decided that it would cost less to cancel them than to build them. Although this released us of all responsibility, we were eager to help the Fleet Corporation settle its affairs with the least expense, and we agreed to buy the shipyard and finish the four ships ourselves. The eight ships we agreed to deliver for a lower price, taking advantage of the elimination of overtime and freedom from government interference. Thus, we saved the government about a million and a half dollars. Similar propositions were received from other shipbuilders, but ours was the first worked out in full detail that resulted in a contract. Judge John Barton Payne, who had become Chairman of the Shipping Board, expressed to Dilks his great appreciation of our spirit and fairness. He said that our contract was used as a pattern in bringing other negotiations to a close.

We had imagined that there would still be a big demand for new ships, with peace restoring the world's trade. This proved to be a delusion.

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Through a New York shipping agency, we received an inquiry from the Eagle Oil Transport Company, a British corporation and subsidiary of the Mexican Eagle Oil Company, one of the institutions controlled by Dr. Pearson and Lord Cowdray. They wanted two tankers of about the tonnage of our ships. Once more the government stepped in with a requirement that ships flying a foreign flag must be licensed by a Washington bureau before contracts became effective. Admiral Benson told us that he would not grant permission to consummate this sale because there were a number of American buyers anxious to obtain new tanker tonnage. We had canvassed every prospective buyer in the United States and could assure the Admiral that any possible purchaser he had in mind was either bluffing, or financially unreliable, or did not want to buy, but the Admiral wouldn't budge. It was only through an appeal to other government officers that he was finally persuaded to issue us the necessary release.

The two ships were built, much changed in design. In our operation we were able to proceed without inspection save by Lloyd's, who on completion granted our vessels the Maltese Cross, the highest badge of perfection issued by that company for workmanship.

Then we closed down our yard, sold the remaining material with a profit showing on our books, and turned our eyes once more toward the Manhattan skyline.

WE played a fairly important part in spreading the skyscraper idea into foreign lands. In the process, I gained some interesting lessons in foreign psychology and business ethics.

“Stay out of Canada,” Black warned me; “all Canadians are liars.”

Being Canadian-born, Black might, I thought, have some basis for this judgment, but instead of frightening me out of Canada, the remark intrigued me.

Everywhere in Canada I found curiosity about and admiration for our building methods, though the skyscraper idea had not yet taken hold. We got work, and I found that Canadians were about as honest, on the average, as Americans. Indeed, I met some unusual cases of financial integrity. For example, when we finished our work on the Art Museum in Montreal, I discovered to my dismay that there was no money to meet our final payment and nobody, really, to appeal to. After interviewing this person and that who might have some responsibility, I called on

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the president of one of the large banks, a charming gentleman. He listened to my story.

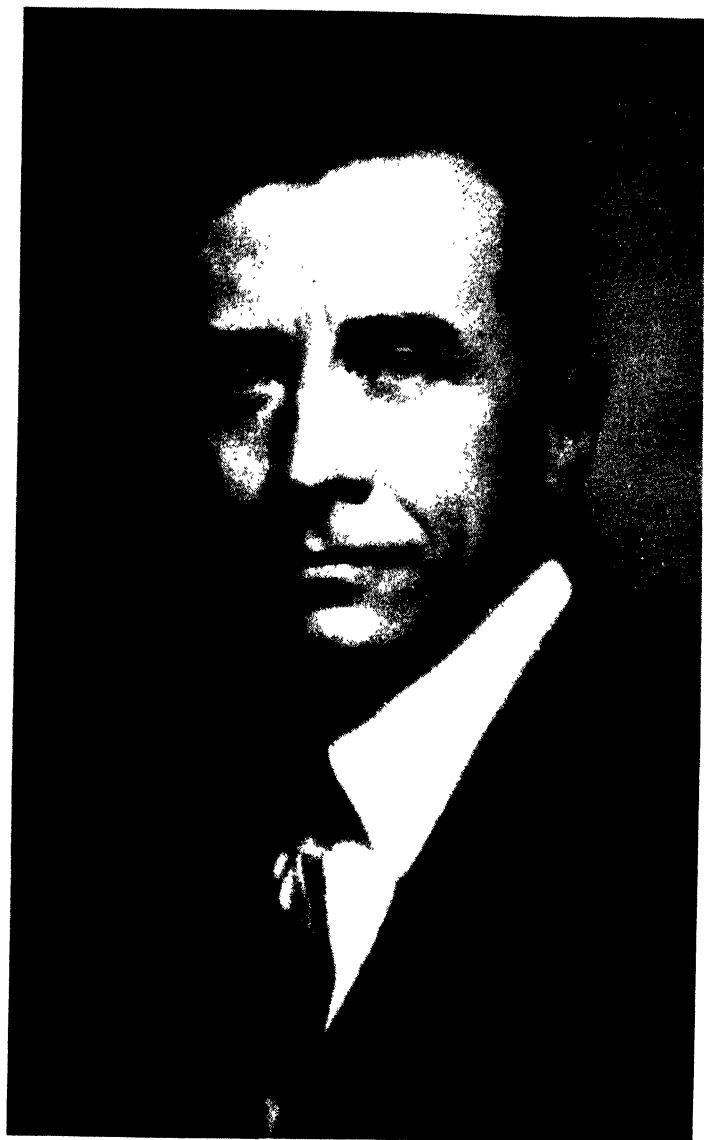
"Mr. Starrett," he said, "I am sorry, but I really have nothing to do with your payment." He seemed to note my chagrin. "Still," he added, "you ought to have your money. Will tomorrow do?"

Tomorrow would do very well, I said, and the next morning in his office I was handed a check for payment in full.

In Montreal I met Charles M. Hayes, president of the Grand Trunk Railroad, who invited us to bid on plans for a hotel and a station at Ottawa. Hayes was an American, who had retained his American citizenship and refused a knighthood. When the bids were opened, we were found lowest on both projects, but it was not politic for Hayes to let us have both. We were asked to take our choice. The hotel was twice as large as the station and so we built the famous Château Laurier.

It was at this time that a slight young man called upon me to apply for a position. He had light eyes, smoothly parted hair, a strong mouth, and a straight nose. He introduced himself as Andrew J. Eken. His frail appearance belied his actual physical strength. He had just come from the Pacific Coast and flattered me by saying that he had selected us as the building firm for which he wished to work. He was so sure of this that, if I would promise him the next opening, he would wait and fill the time studying New York construction methods. At luncheon

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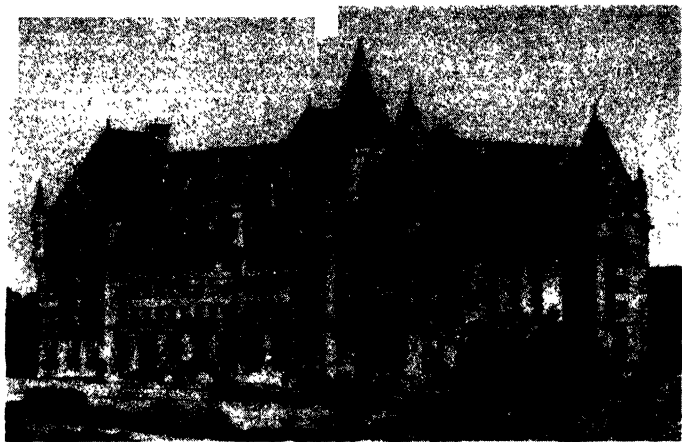


(Pirie MacDonald)

ANDREW J. EKEN

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CHATEAU LAURIER, OTTAWA

Ross & MacFarlane, architects

the next day, I had a long talk with him and found him possessed of spirit and a remarkable knowledge of the business.

I sent Eken up to Montreal as assistant to our Canadian manager. Shortly afterward, his superior had a mental breakdown; I put Eken in charge. Just at the time we were involved in a difficult job.

Change was apparent immediately. My weekly tours of inspection became needless. Eken handled everything with good judgment and his operations were uniformly profitable.

Our chief enemy in Canada was winter. When, in 1911, we built the Fort Garry Hotel at Winnipeg—also for Hayes—we carried on with the thermometer sometimes as low as 40 degrees below zero. To keep the con-

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crete from freezing before it was placed, we heated the gravel and sand in long iron pans and mixed the concrete with hot water. It was an entirely successful method. Some three months later a change was made in the boiler room and we had occasion to expose several feet of these foundations. The concrete was hard as flint and still retained a considerable amount of heat.

We had an unusual experience with the excavation for this building. The foundations rested on caissons cut through gumbo soil similar to that encountered in Chicago. When the steel columns and cross girders were placed, our superintendent removed the bracing shores that had retained the bank of the excavation. On Sunday of that week, I received an urgent telegram from the architect. When I arrived in Winnipeg, I found that because of slippery alkali seams, earth movement had started as soon as the braces were removed. The street and a club building opposite had given signs of moving over into our basement. Our superintendent had seen this and quickly replaced his bracing, but not before the club had moved several inches nearer our site.

Hayes had plans for another large hotel in the Canadian Northwest, for the Grand Trunk, and the architects informed us that we were low bidders. Hayes went to England, booking return passage on the *Titanic*. He, like Isidor Straus, lost his life in the great disaster of that homeward trip.

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We continued to find much work in Canada. We had been bidders on the remodeling of the Canadian Pacific Station at Montreal. Another firm, underbidding us, got the contract; but they made a mess of the thing.

One of the ticklish problems on this job was the foundation for the new part, the extension to the west. The soil was boggy, but the builder had gone ahead as if he were working in hard, dry soil. Soon he ran into trouble. The railroad had to call in a firm of experts from New York to finish the foundations. The whole affair went on in this haphazard way. There were piles of building stuff all over the place. The railroad offices were all cluttered up. Train service was disrupted. One day I was calling on David McNichol, vice-president of the road, in regard to some other work. He began to complain to me bitterly of the frightful chaos in the station.

"I told you so," I said. "Your engineer thought our bid was too high, and I said the other fellow's bid was too low. I said he couldn't possibly do the work for the money. It looks as if I was right, doesn't it?"

"Yes, it does," McNichol admitted sadly. "Starrett, suppose we turn this job over to you. How long would it take you to finish up?"

"Three months!" I said.

"All right," said McNichol. "Take hold."

It was a rash offer. I regretted it almost immediately. Eken called my attention to the fact that we didn't know

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to what extent the contractor might be involved in sub-contracts and what trouble there might be in straightening them out. However, the station was finished in the agreed time; and the credit belongs entirely to Eken.

The Canadian Pacific was pleased and awarded us a contract to erect an office building in Toronto.

We found another way to combat the cold. In Montreal, where we were constructing a warehouse and office building of reinforced concrete, our ingenious superintendent enclosed the entire building in tarpaulins, so that it reminded one of a large circus tent. By the use of salamanders, he kept the interior warm enough for work; the warehouse, started in the late fall, was finished the following spring.

We climaxed our Canadian adventures by building the Ritz Carlton Hotel. Warren & Wetmore of New York were the architects.

I had known the handsome Mr. Wetmore for some years. He had been responsible for the design of the Imperial Hotel at Broadway and Thirty-second Street in New York, and we had been notified by the owners to submit a proposition, at the time when the United States Realty Company was the subject of much criticism. Wetmore treated me to a chilly reception.

“Starrett, I don’t like your firm, nor its reputation. I don’t like your methods, and I don’t like Black. The own-

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ers have requested me to have you figure on this job, but I advise you in advance that I shall do everything I can to prevent your obtaining it."

I thanked him for his frankness, which had saved me the trouble and expense of making an estimate. This frankness commended Wetmore to me. I felt that, if I could overcome his prejudice, we could work together very well. I made some mention to him of my knowledge of the building business and offered to supply him with quick information or estimates of any sort, if ever he should need them. This offer remained in his memory.

Wetmore, a Harvard man, was immaculate in dress and aristocratic in appearance. He always reminded me of Robespierre. I saw little of his partner, Warren, but when we built the Aeolian Building from their designs and were decorating the salesrooms on the second floor, the question of colors arose. Mr. Warren sent to the building one of his shirts, a skirt belonging to his wife and one of his neckties, and these were our color instructions.

When we closed the contract for the Ritz Carlton Hotel in Montreal, caution led me to inquire in that city about the source of money to pay for the building. I wanted a financial statement. Charles E. Hosmer, president of the Canadian Telegraph Company, was also president of the hotel company and I applied to him for information. He treated my request as a joke. The company was composed of the wealthiest men in Montreal; the hotel would undoubtedly be a success; if not, it could be converted into

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a club and run profitably. I reported this to Black, who trusted no Canadians but thought it should be chanced. We collected as closely as we could. At the end, there was a last payment of \$40,000 due us. When the hotel was opened, it was not immediately successful. Eventually, we were forced to take the \$40,000 in second mortgage bonds. I found it almost impossible to get in conference with the directors to argue the subject.

After the World War the Fuller Company was engaged by a number of influential Japanese, among them Baron Kondo, to erect several buildings in Tokyo. At that time, my brother William was vice-president of the Fuller Company: he it was who originated and developed the entire project.

The preliminary negotiations for these three structures, the Nippon Yusen Kaisha, Mitsubishi, and Marinouchi buildings, had gone on for weeks, but I was not enthusiastic. Tokyo was far from New York, and Japan was utterly strange country. I had heard much about the financial unreliability of the Japanese and stipulated that we must charge cost and 15 per cent; besides this, I made a condition that all the money necessary for our work must be deposited in the National City Bank in New York and that every shipment of material from this country must be paid for before it left the dock at San Francisco.

One of the Fuller directors said that a 15 per cent fee was preposterous and predicted that the Japanese owners

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would not consent. But I foresaw that we would not carry on a continuous business in Japan, because the Japanese merely wanted us over there to teach them how to build. Afterward, they would do their own work.

At a banquet in New York, we sat around a table with our Japanese customers. Baron Kondo had beside him an interpreter, who translated our terms as we laid them down. He listened carefully. The conditions were acceptable and the contract was closed.

The architects were Japanese. The buildings were designed to resist earthquakes and required an inordinate amount of knee bracing and riveted work to make the structures safe. They were all to be built on piles. The exterior of the Mitsubishi Building, above the second floor, was to be covered with tiles, somewhat similar to those used in bathrooms in this country.

We sent two or three of our best superintendents to Tokyo and shipped heavy pile drivers, dredges, and derricks, having in mind a demonstration of American building methods that would repay the Japanese for the excessive commission they were allowing us; but when these arrived in Japan and were set up for use, we met a strike. The machines were displacing Japanese hand labor. After consultation with the owners, we stored our equipment and proceeded in an Oriental manner. All the excavation was done with shovels, the earth loaded into baskets and carried on yokes over the shoulders of Japanese coolies or Japanese women. We also employed hand carts. Pile

drivers were prohibited; the piles were driven with a wood frame having a pulley at the top, from which descended a heavy iron hammer on a rope. About twenty Japanese women lined along the rope would pull up the hammer, all would let go, and the hammer dropped on the pile. Yet, when we left Japan, they bought our equipment and put it in use on subsequent work.

When we started in, we were puzzled by the fact that the Japanese invariably enclosed a building under construction with a curtain of poles and matting. This shroud served no useful purpose. It was, in fact, a terrific fire hazard. No one could explain why it was used. The only reason our men could elicit was that a builder didn't want his structure to be seen by the Emperor until it was entirely finished. Boldly our men abandoned the custom, erected their steel frames in open air, in plain sight of everybody. The Japanese gazed at us in amazement. Japanese policemen climbed up on the structure, prodding into corners of the steelwork with their swords, curious to see whether something might not be wrong.

This was one time we did not build swiftly! It took an inordinate time to gain authorization to change even a bracket, once it was shown in the plans. We found the Japanese overseers to be officious, scrutinizing our every alteration with suspicion, and passing along our requests until we sometimes thought they must have gone to the Mikado himself. Yet, we could appreciate that these Jap-

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anese, if not original, were a wonderfully imitative people and were watching us closely.

My brother William subsequently toured Japan, making a study of comparative building methods, and returned with a story that had reached him by hearsay. A Japanese shipping company invited Scotch and English shipbuilding firms to submit detailed plans and estimates for a new vessel. They rejected the bids, but kept the plans and themselves built the ship. The trick was so successful that it was tried again, but the wiser English firm sent their plans subtly awry, and when the gleeful Japanese launched their new ship, it sped nobly down the ways and out into the basin, then, to the consternation of its owners, turned turtle. I cannot vouch for the truth of this story, but it came to me from a reliable source.

Our buildings were destined to experience the terrific earthquake that razed so much of Tokyo a few years afterward. One of our men, J. H. Morgan, stayed in Tokyo and established himself in business. He wrote us a letter describing the appalling effects of the tremors and sent photographs, one of them showing a half acre piled with dead bodies. When the shocks began, he was seated in a barber chair in one of the middle stories of the Mitsubishi Building. The vibrations were so severe that the shades and globes of light fixtures were swung up against the ceiling and smashed. Yet the buildings survived the quake splendidly, were repaired, and are in use today. A large num-

ber of those bathroom tiles on the exterior of the Mitsubishi Building were shaken off.

We had much trouble with our men because of food. They were anxious to go to Japan, and all overanxious to get back. They complained that they were fed on raw fish. An attorney, Faulkner Hill, who took care of our casualty insurance, went joyfully to Japan for a vacation. He was somewhat stout, but shortly after arriving in Japan began to regain his pristine slimness. He stood it for a while, but finally came home.

Faulkner explained the reasons for his return: "Chief, I'd rather die than stay in that country. I lived on raw fish. One morning, they brought in some beautiful strawberries. I thought, here is something! I enjoyed them immensely. The next day I was taken out and shown where they had been grown. They were all fertilized in human excrement!"

Cuba, too, had its eccentricities, but they were not like those of Japan.

It was through Charles E. Mitchell that I erected a new building for the National City Bank in Havana, where the old quarters had been outgrown. This happened after I had formed my own company, Starrett Brothers. I traveled there with Lee Olwell, a vice-president of the bank, and together we looked over the site. It fronted on a street

so narrow that trolley cars crowded pedestrians on the three-foot sidewalks up against the building.

The bank's plan was to purchase a building in the rear on another street and make alterations combining the two. I suggested to Olwell that the bank sell its present quarters and buy an old convent site, of which there were several available, and erect an entirely new building. This idea was adopted.

When it was first announced that we had received this commission, several Cuban contractors asked us to sublet the work to them. One sent to New York a representative who offered to pay us our fee and take over all local responsibility. He warned us of the political interference we would encounter, the necessity of bribes, the difficulties of working with Cuban labor, the blinding heat. We were not impressed. One firm was anxious to sell us a large quantity of stone. We selected a man of our own who delivered it to us and did the carving for about half the lowest price submitted. For wood, we used mahogany throughout; it was native to the island and hence inexpensive. The result was handsome. We found the Cubans reasonably good workmen; and we were very little bothered by the politicians. Despite torrential rains, the building was finished on time.

On an earlier pleasure trip to Havana, in company with Black, I had met an amusing fellow by the name of Cespedes. Even on a pleasure trip, Black's speculative

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(National City Bank of N. Y.)

NATIONAL CITY BANK, HAVANA

Walker & Gillette, architects

mind did not relax. He had conceived the idea of buying an important Havana corner and building on it. Cespedes, who afterward became quite prominent in politics, was concerned with one of the sites we considered purchasing. He came to call on us, accompanied by an interpreter, who explained that his principal spoke no English. The conversation through the interpreter became quite animated, finally even heated, and at last the excited Cespedes could maintain silence no longer. He quite forgot himself and jumped to his feet, expostulating in the most perfect English, while Black and I laughed.

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Cuba, Canada, and Japan were the only foreign countries I worked in. The Fuller Company, indeed, had a chance at a job farther away, however. Against my better judgment, we had gone in for a \$100,000 advertising campaign, and the only answer we had was from a maharajah in India who wanted us to build him a palace. We declined with thanks. No, there was one other inquiry. A clergyman in Texas wrote proposing that we rebuild the steeple on his church and take a mortgage in payment. We turned that down, too—in more senses than one, meaning that, also, was too far from Broadway.

LABOR unions have always been a serious problem for the builder. I had only minor difficulties with them before my arrival in New York City. Then, it was only a short time before I was head over heels in trouble. An immense amount of building construction was going on and labor was hard to control. If you fired a mechanic, he went across the street and was welcomed on another job.

One of my first New York assignments was the Macy Building. As this work proceeded, strikes became almost a daily occurrence. On a single day, we had thirteen strikes. All sorts of excuses were trumped up by the delegates. Most of these strikes were jurisdictional, that is, two different unions claimed the same work. The steam fitters claimed the piping for the elevator company, and the plumbers and steam fitters were constantly fighting about the proper allotment of their work. Further along, we began having trouble with the plasterers, carpenters, and in fact almost all of the trades.

When we were plastering this building, we had about

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seventy-five plasterers working on scaffoldings, doing the ceilings of the upper floors. To make better progress, we worked overtime, continuing far into the night, with electric lights over the scaffolds. The plasterers, already getting a large wage per hour, which was doubled for night work, used to cut the electric wires and sit upon the scaffolds and smoke. In order to make any progress, we had to employ electricians to follow around and repair the lights as fast as they went out.

The efficiency of our men fell off decidedly. In Baltimore I used to count on a mason's laying 2,000 bricks in a day. In New York, we hoped to get 1,500, but as a matter of fact could count on only 1,000. At one time, in a very busy period, for some months we did not get more than 450 to 500 bricks laid per day. At this time it was reported that the bricklayers had fixed the number of bricks a man should lay, and anyone found going over this amount was fined. I never got this verified and am inclined to think there was no such rule in the organization. A few of the locals may have had it, but the limitation did not last long.

The notorious Sam Parks was a big factor in all these troubles. He was a remarkable character. He had a powerful frame and a wonderful constitution, but in fighting his way up from the bottom he had been involved in so many physical encounters with rivals that he was badly "bunged up." The beatings he had received resulted in an incipient case of tuberculosis; in addition to this, he had a venereal



(Brown Bros.)

SAM PARKS
in a labor parade

disease which later developed and drained his strength. He had many enemies and rivals in labor union circles.

Sam Parks, for all his reputation, was a likable fellow in many ways. He used to visit the jobs in a cab, bringing with him a fine bulldog, for which he boasted he had paid \$100. He would leave the cab a block or two away from the job, with the bulldog chained to the seat, and walk around to make his observations. I ran into him one

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day in the downtown district as he was getting out of his cab. I asked him why he did not drive right up to the building, as he had a reputation for boldness. He replied, "If those blankety-blank blanks saw me riding in a cab, I couldn't hold my job another day."

As time went on, labor unions came more under the control of their leaders. While many of the delegates were decent fellows, most of them were playing union politics and would resort to anything to carry their elections. I have heard much about graft, and from stories told me by subcontractors, I judge that a great deal of it was exacted. However, I never was approached by any of the leaders on this subject. In my judgment, there is no necessity for a contractor to pay graft if he stands firmly against it. He is then likely to be let alone. I want to say in this connection that I have been in the contracting business since 1897 and have never paid a nickel to any labor delegate.

Sam Parks made a mistake during his strike against the Hecla Iron Works. He demanded \$2,000 for settling it, and when a check was offered to him he carelessly took it. He had to indorse it to get the money, and was caught. He was sentenced to a term in jail.

Another delegate, named Frank Buchanan, was trying to supplant him as leader of the housesmiths' union. Their national convention was scheduled to be held in Kansas City at about this time. Buchanan had lined the men up, and expected to be elected president of the union. Parks in jail got wind of it. Through some friends he got out on

bail in time to attend the Kansas City convention. He arrived while Buchanan was making a speech, having everything his own way. Parks fought his way up to the speakers' stand, interrupted the proceedings, and stamped the convention in his own favor. He went back to jail, and died there.

I made it my business to get acquainted with the presidents of the different unions and most of the delegates. The president of the carpenters' union, William Hutchinson, was considered a tough citizen. I was of this opinion before I met him. When I came to know him, I found he wasn't a bad sort. To be the head of the carpenters' union, one had to be a politician and Bill was a good one. I always found Hutchinson as reasonable as he could be, considering the pressure put on him by local unions when disputes occurred.

The national union of carpenters bought a considerable tract of land at Lakeland, Florida, and erected thereon a fine clubhouse. It was to be for their superannuated and sick members. I have a winter place at Mountain Lake, a short distance from Lakeland, and on several occasions invited Bill over to play golf with me. Once, he came over and brought one of his lieutenants, to play a foursome with me and Charles L. Farrell, president of the National Newark and Essex Bank, of Newark, New Jersey. I had told Farrell about the clubhouse and land owned by the carpenters. As we walked down the first fairway, Farrell spoke to Hutchinson on the subject of the clubhouse and

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property. "Mr. Hutchinson, how do you finance such a large operation?" Bill replied, "We have 350,000 members in our union. Each one pays ten cents a week into the treasury." Farrell interrupted him and said, "Enough said, Mr. Hutchinson, I understand perfectly."

In 1923, Starrett Brothers secured their first contract in Newark. Newark was a hotbed of trouble and we were warned that to carry on business with any comfort we would have to pay graft to the union leaders. William Lyons was president of the local board of unions. A few years previous, Lyons had been put in jail for some labor irregularity, but was pardoned by Governor Woodrow Wilson.

The most powerful man in New Jersey, however, was Theodore Brandle. Brandle was described to me as a grafter. When I met him, I found he was a very determined man with a square jaw—evidently accustomed to carry his point. During the years when our business was active in Newark, we came in contact with Brandle on numerous occasions. We could rely absolutely on what he told us. He settled several minor strikes when we explained the facts, and never even intimated that he wanted any pay. He told me one day, when I had a long talk with him, that he had been accused of grafting a great many times, but he said, "I give you my word of honor I have never taken a cent personally. It is quite possible some delegates have done it; if they have, I want to know nothing about it." I believe Brandle told me the truth.

Our first contract was for the Firemen's Insurance Company Building, a short distance from the Park Place Station of the Hudson Tube Road. When we started to set steel, a delegation from the steelworkers told us their rules for dealing with contractors. As none was serious, we agreed to all of them. When the first few pieces of steel for the foundations were thrown into the excavation, a foreman whom we had employed from the Newark union announced that he must have six men to help handle these few light beams, none weighing over 100 pounds.

I told the foreman that two men were plenty and they were all we would hire. The men quit work. I tried to get hold of Brandle to adjust the matter, but couldn't find him. Three or four days later, I visited the job and found a number of delegates of different trades standing in front of the building site. I talked with them and told them that we were carrying out our agreement with the union and expected them to do the same. The delegate for the iron setters called me aside and told me that his union had a society for caring for the superannuated and injured members of the union; if we would contribute \$2,500 to this society, everything would move along smoothly.

I went back to the assembled delegates, taking the iron man along with me. I told what had been proposed to me and said, "Gentlemen, we won't do this, and I wish you would pass that information around among the union leaders in Newark. If you agreed to start the job tomorrow for a nickel, I wouldn't pay it. I went back to the office

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and about two days later the work started and we had no further trouble on that job.

Iron setters were members of the Housesmiths Union. They were the roughest people with whom we had to deal. On the Times Building at Times Square in 1902, we had a lot of trouble. With the help of publicity from the New York Times and because of the fact that the public was tired of the outrageous goings-on of this union, we were able to get the support of the New York police. I saw the captain of the district and told him the situation. The iron setters had what they called an "entertainment committee," who waited around the buildings until the men quit work and then assaulted and beat them brutally. This captain evidently had instructions from the Police Commissioner. He told the squad he sent to the building to put a stop to this condition. "Don't argue with these men, let them explain in the hospital." One contact was enough. We had no more difficulty.

On the Plaza Hotel, in 1905, we had three men murdered. We knew the murderers, but we could get no one to testify. Someone later sent an iron setter to my office with the request that I give him a job. I recognized him as one of the men concerned in knocking a steel setter off a floor beam on an upper floor. I told the man that he was a murderer and refused to employ him. He never worked for us again, to my knowledge.

There has been for many years, and is at present, an agreement between the large cut-stone contractors and the

local union, under which the union refuses to set any stone cut outside of the New York metropolitan area. This custom has become so firmly established that nobody questions it. The stone, 90 per cent of which comes from the Indiana limestone quarries, could be cut at a greatly reduced cost at the quarry, and in addition to this, large sums in freight costs would be saved.

I have always been on the side of the union men. That they are responsible for all the advance in mechanics' wages in the last thirty years, I am unwilling to admit. However, they have undoubtedly stabilized the wages. Unfortunately, union rules level the ability of good and poor mechanics to the same plane. In slack times, this does not make so much difference, as the employer can select the best men and get a full day's work, but when there is more demand for mechanics than supply, the delegates get a better control of the men and can foist on the builder the workmen most useful to them in union politics.

I have frequently had delegations from some union call upon me to demand the discharge of some trusted foreman because he was unfair and drove the men. I have had several strikes on account of my uniform refusal to yield.

Occasionally, I came in contact with Samuel Gompers. The labor leaders whom I knew referred to him as "Old Sam." There was a sort of affectionate strain in their conversations, but they referred to him usually as of minor importance. He was a small man, almost a midget, and I was unable to get well acquainted with him because he

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seemed to distrust everybody. As the years went on, I came to believe that he was absolutely honest and was proceeding along lines which he believed were for the best interests of the working man. I believe Mr. Gompers was a man of high principles.

I'm afraid we've bid too low," I said to Eken. "We'll be lucky if we break even."

"I think I can pull it through without a loss, if we can buy our materials at prices no greater than those used in the estimate," he said.

"All right, go to it."

The job was a large plant at Highland Park for Henry Ford—a building 800 feet long and six stories high—to be completed in six months. Our Detroit manager had made the estimate and closed the contract. Then, suddenly, he announced to me that he was quitting, to form a construction company of his own. I put Eken in his place, knowing it was a difficult assignment. I had gone over the figures and the estimate seemed to me dangerously low. Eken went to Detroit and I dismissed the matter from my mind.

Repeatedly, however, reports came to me that things were not going well in Detroit. Directors of our company urged me to discharge Eken. I told them to keep their

hands off. I had complete confidence in him. At the end of six months, he came to my office. I was shocked. He was skin and bones, and his hands shook like those of an old man.

"What's the matter, Andy?" I asked.

"I came down here to get fired," he said. "I told you I'd pull through with a profit, and we've lost \$80,000."

"Forget it," I said. "You're taking a three-months vacation in Florida with pay. When you come back, I'm going to make you a vice-president."

I knew the loss was no fault of Eken's. Materials could not be purchased at the prices used in the estimate. This was particularly true of the gravel, of which an enormous quantity was required.

When I announced that Eken was made a vice-president, there came another roar from the directors. What, promote a man who had just lost \$80,000? My answer was that I was running the Fuller Company. That put an end to protests about Eken.

Eken came back from Florida full of health and enthusiasm. He wanted to go back to Detroit to recoup his loss. I sent him. One of the shrewd things he did in Detroit was his way of getting business with Sebastian Kresge, the five-and-ten-cent-store man. These were his tactics.

He had bid simultaneously on two Woodward Avenue buildings, one a twelve-story reinforced-concrete building for the Vinton Estate, involving some very difficult construction, one a ten-story steel-frame building for

Kresge, of very simple design, for which the steel was already fabricated. Since both bids were low, Eken didn't want both jobs, and he had reserved the right to withdraw either bid if it were not accepted within twenty-four hours. His Vinton bid was accepted immediately, so he withdrew his bid on the Kresge job. Kresge gave his building to another contractor.

On the date when the Vinton job was finished and delivered to the owners, the Kresge building down the street—a far simpler job—didn't even have its outer walls enclosed. Kresge's architects summoned Eken to their office and proposed that he take over the Kresge building and finish it, at his own price. Eken refused. But the architects insisted. Kresge, they said, had to have his building finished for a Thanksgiving opening and it looked as if it wouldn't ever be ready. Finally, Eken stated that he would take over the work on this basis: The builder to take his superintendent and foremen off the job, Eken to put his own superintendent and foremen on the job. The builder would pay these men their regular salaries. Otherwise, no payment to the builder, and no extra charge whatever to Kresge for our services.

Both architect and Kresge protested that this was unfair to us. Eken answered that this was the only arrangement on which we would assume the work. At the same time, he made it clear to Kresge that he was taking the job purely as a demonstration of what would result in efficiency and speed.

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Kresge opened his store on the last day of October. As a result, we negotiated with Kresge a blanket contract to build all his future buildings, which might run over \$200,000 each. We did not want to bother with smaller jobs.

Our biggest triumph in Detroit was the construction of the ore docks for Ford's River Rouge plant.

From the first moment of the announcement of Ford's decision to erect a giant plant at River Rouge (which, everyone suspected, meant an ultimate transfer of all his activities away from Highland Park), Eken had been constantly in contact with W. B. Mayo, Ford's chief engineer, trying to get a contract on a fee basis. As I have said repeatedly, we regarded this as the most satisfactory relationship in construction work, both from our point of view and the owner's. Ford, however, had always let out his work on competition. He was much opposed to the fee idea. Though we had an excellent standing for our work at Highland Park, it was difficult to show the advantages of the fee contract.

The ore docks at River Rouge were a gigantic concrete job, and during all the period when we were trying to get a contract with the Ford Motor Company, the Ford Company had kept the gravel market in Detroit badly disorganized. The report was abroad that Ford intended to build the docks himself with his own organization, and this meant that he was potentially in the market for about 750,000 yards of gravel. The ambition of different com-

binations of gravel concerns to land this enormous order had made them neglect ordinary business considerations. Gravel prices had become very erratic. All competitive bidding in Detroit was upset.

One day, when Eken had called on Mr. Mayo to push his proposal of a fee-basis contract, Mayo said:

"Eken, how much do you figure that the material for a yard of concrete would cost you if you were buying for a job of this size?"

Eken pulled out a pencil and put down on a pad the proportions of gravel, sand, and cement in a yard of concrete and the prices of each.

Mayo glanced at the prices. "Have you ever bought gravel for that price, Eken?"

"No," said Eken, "but if I were buying 750,000 yards, I would expect to get it at that figure."

Mayo sat in thought, did some figuring, then asked Eken what his fee for doing the work would be.

"Two hundred and fifty thousand dollars," said Eken.

"All right," said Mayo. "Go ahead and start buying your gravel."

The contract which Eken drew up with the Ford Motor Company provided that we supply the organization, Ford to pay them direct. We had to invest no money whatever, meet no pay rolls, pay no bills.

Eken not only bought the gravel for the job at a price below that he had set down on the pad in Mayo's office, but *fifty cents a yard below* the lowest figure Ford had been

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able to get, in over six months of negotiation, previous to our obtaining the contract.

The docks consisted of a series of parallel walls 2,750 feet in length, resting on a slab of concrete of that length, 500 feet wide and 5 feet thick. The wall nearest the river was 11 feet high and of the same width. The back wall was 67 feet high and 67 feet wide.

Because at the time there was a shortage of labor in the country and because it began to be apparent that we could hardly escape participation in the war, it was necessary to devise a plan to carry out this work that would require the minimum of labor. Eken built a dock on which the gravel ships deposited the aggregate for the concrete. Under this ran a tunnel with conveying belts, so that the gravel when deposited on the dock fell through to the belts and was carried up to the storage bins.

Similarly, our concrete plant was built so that the entire process of delivering materials, mixing them, and delivering them to the forms was done mechanically.

The forms were great steel sections hung from traveling cranes which operated on a track. The forms were set up in the morning and secured in place by screw jacks. The concrete was poured for eight hours, and eight hours afterward the forms were jacked loose and set in their new positions.

This plant placed 1,500 yards of concrete a day, yet it required only fifty-seven men for its operation! No such output of concrete in proportion to man power had ever

been reached before and probably has never been reached since. The \$250,000 cost of the plant was amply justified.

We had not, however, completed the docks when the government, greatly dissatisfied with the progress being made on Ford's contract for submarine chasers—and laying this difficulty largely to the lack of proper riveting forces and compressed air with which to operate guns—took over the plant in its entirety. We were forced to rig up the old system of towers and chutes, tremendously increasing the labor hours. It was difficult to get men, too, because America had gone into the war and there was labor shortage everywhere. We finished at a much slower pace.

In the early part of the contract, we were much bothered by Ford men who tried to tell us how to do our work, despite the contract which provided that we were to run the job. Finally, Eken got Ford himself and Mayo together and gave them an ultimatum. "Who is running this job, you or I?" he demanded. "If I'm running it, I'm running it; if not, I'll step out!" It is doubtful whether Ford or Mayo had ever been confronted with such frankness. They admitted that, according to the contract, we were to run the job, and, thereafter, we had no interference.

I had a taste of Eken's spirit myself. He had put in a requisition for several new derricks. I refused my O.K. We had sufficient equipment in our yards, I wrote him. Why not use that?

Suddenly Eken appeared in my office in New York.

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"Are you running the Detroit office, or am I?" he demanded.

"You are," I said.

"Well, you haven't a single piece of machinery in the yard I can use economically! If you want me to make a success out there, I must buy what I need."

"O. K., Andy," I said, "go ahead."

I recognized that he was doing exactly what I would have done under like circumstances.

Ford men were constantly leaving Ford and going over to General Motors. This worked to our advantage. Some of these men, who had conceived a great admiration for us in our work for Ford, were in a position at General Motors to swing contracts to us. We got many buildings in and around Detroit in these years when the automobile was doubling the population of the Motor City every decade.

We had one curious experience there. We had built several plants for the Timken Roller Bearing Company, and they had expressed high satisfaction with us. Suddenly we received notice that they could no longer employ us. The Timken Company had been warned by several automobile companies that they would have to stop giving us work or else lose their patronage. And why so? Because we used union labor on our jobs! This was one of the maneuvers by which the motor companies tried to keep union labor out of Detroit.

THE door of my office opened. I glanced up and was surprised to see Mr. James Stillman, the financier whose cold, silent stare had so often disconcerted me in directors' meetings.

"Pardon me, Starrett," he said. "I want to show my friend your view."

Behind him was a small, dark-whiskered man whom he introduced as Count Something-or-other—an Italian.

So the great Stillman, too, had heard of my famous view!

He led the Count to the window and pointed out the magnificent panorama of the city. Stillman turned, walked to the door with his guest, then wheeled about and came back to my desk. He seemed to have something on his mind. He sat down, motioning me to go on with my work. I was busy and troubled. Strikes were besetting us, construction was behind schedule. But I couldn't concentrate on anything, with that inscrutable figure sitting there puff-

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ing his cigarette in its long holder and gazing at me silently.

"Starrett," he said at last, "you look worried."

"Good God!" I exclaimed, "Why shouldn't I look worried? I feel like a juggler trying to keep a dozen balls in the air! If I drop one of them, I'm sunk."

Stillman rose and gazed at me earnestly. I believe that at this moment he, too, had plenty of worry on his mind. He was threatened with an investigation and it was said that he planned going to Europe to escape it. "Starrett," he said, "don't worry. It doesn't pay."

He turned and went out of my office. I heard his foot-falls down the length of the corridor toward the elevator. Then they paused and I heard him coming back. Again he stood in my doorway.

"Starrett," he said again, "don't worry. It doesn't pay." He gazed at me. Then he said: "We have confidence in you, Starrett."

He turned again, was gone.

That was the last I ever saw of Stillman. He went to Paris and died there. I shall always remember him in that one warmly human moment.

In my early days in the Fuller Company, we had an arrangement with the Carnegie Steel Company by which we took no competition in our steel purchases. When making a price on a building, we used the Carnegie quotations. If we got the job, we bought their steel at their price. When

other steel companies came to us, we told them the facts frankly.

When the Carnegie Company was absorbed by the United States Steel Corporation this arrangement was discontinued.

One morning Charles M. Schwab walked into my office. When the United States Steel Corporation had been formed, with Morgan's backing, Schwab had been its first president, but he had later left and had bought the Bethlehem Steel Company. Schwab was boyish and buoyant, a man of great charm. He greeted me heartily and said he had come to make an arrangement with Bethlehem similar to the one we had had with Carnegie in earlier years. I told Schwab I would be glad to do so if our directors approved; but that, of course, this could apply only to lump-sum contracts, where we were spending our own money. On our cost-plus fee contracts, owners frequently had ideas of their own where material was to be bought.

"Oh, that's all right," said Schwab, "I'm sure that we can fix it up so that we'll get most of your business." Then he added: "Starrett, how would you like to have an option on 1,000 shares of Bethlehem, materially under the market?"

I told Schwab that this was very kind of him, but I couldn't accept any such offer. It would lay me open to the charge that, in buying from Bethlehem, I was feathering my own nest, putting my own interests above those of our clients.

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"Oh, nonsense," Schwab said. "Nobody would think that of you. I've already given Black an option on 3,000 shares. Why shouldn't you take an option, too?"

"Well," I said, "if that's the case, I'll put it up to our board of directors, and if they approve, I'll accept."

I told Black about it. He said it was perfectly all right. Still, I insisted that he take it up with the directors. A few days later, Black told me the directors saw nothing unethical in the option. I notified Schwab, but I heard nothing of it.

About this time, we were starting work on the Bamberger department store in Newark. The engineers had specified Carnegie Standard Sections. Here I saw the chance to do Bethlehem a good turn. Bethlehem-rolled girders would serve quite as well, even better than the riveted plate girders specified, and I managed to get the engineers to approve the substitution.

I met Schwab a few days later and told him what I had done. He thanked me, then he said:

"Starrett, I've been thinking over that option and I believe the best way would be for me to credit you with a dollar a ton on the steel you buy from us until your stock is paid for."

I was astounded. Schwab didn't realize that I would be pocketing a dollar of our client's money on every ton of steel purchased from him.

"I don't like that idea," I said. "Let's forget the option."

Shortly after that, for our own account, we undertook

a large addition to the Whitehall Building, on the Battery. There were about 9,000 tons of steel, with very little shopwork—a beautiful order. I told Black that this would be an ideal job for Bethlehem; and our hands were free, for it was our own building. We called Schwab down to Black's office, and I described the order—almost entirely heavy sections, the only complicated shopwork being in the windbracing of lower columns. Schwab and I agreed on a price.

Three or four days later, Black called me up and said Schwab was angry and accused me of misrepresenting the character of the steel. When we called Schwab in, he was in an irritated mood. He said I had told him the steel was about the same as that in the Gimbel Building, but it wasn't.

"Gimbel Building!" I said. "We didn't build the Gimbel Building. I don't know anything about the steel in that building!"

Then I described the Whitehall order again and its small proportion of shopwork. But Schwab was in no mood to listen. "My manager tells me we'll lose \$150,000 on the order," he declared.

This was preposterous.

"All right," I said. "If you don't want the business, we'll release you."

He thanked me and went out.

The next day, we bought the steel from the Brown-Ketcham Iron Works for fifty cents a ton above Bethle-

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hem's price. But Brown-Ketcham had to buy their material from Carnegie at Pittsburgh, ship it to Greensburg, Pennsylvania, unload it, fabricate it, reload it, and ship it to New York. Bethlehem manufactured their own material at Bethlehem and had fitting shops near the steel plant. Certainly, they could turn out the order at a much lower cost than Brown-Ketcham.

Schwab, a busy man, had listened to his sales manager without realizing that a \$150,000 loss on 9,000 tons would mean over \$16 a ton. Before accepting Brown-Ketcham's price, I told Black that I wanted to go back and square the matter with Schwab and give him the facts, as I was very anxious to retain his friendship. Black, however, was miffed with Schwab at the time and ordered me to go ahead with the Brown-Ketcham Company.

Near to tragedy was my experience with Jacob Fradus, who helped to wreck the old Equitable Building at 120 Broadway, after it was swept by fire. I was in Toronto at the time of the fire and telegraphed to Gerald Brown, the comptroller, offering our services. When I returned to New York, Brown informed me that one of our rivals had offered to remove the old building at actual cost. As often happens, this soon proved more prolonged and expensive than letting the job to competent builders, who expected to make a profit and therefore had an incentive for proceeding in the most economical manner. Brown was disturbed by the mounting costs and asked if I would not take a

lump-sum contract to demolish the balance of the building. From my office in the Trinity Building I could watch progress and it seemed to me there was an enormous amount of lost motion. We agreed to take over the work for \$110,000, which included a profit of \$10,000. We did the work for less than \$100,000 and divided the saving with the insurance company in accordance with our agreement.

The men engaged in wrecking obsolescent buildings in New York were a close-knit fraternity, with a code all their own. We had had bad experiences with some of them and had become very cagey about making deals with them. When the news got out that we had the contract to wreck the Equitable Life Insurance Building, after the great fire of 1912, a strange individual turned up in our office. His name was Jake Fradus. He was a Pole. He was short and fat, and his clothes were extraordinary. They were both too tight and too big. His coat, buttoned close around him but draped down low over his thighs, and his brown eyes stared out above a collar too large for him. My assistant, Ed Beinecke—that rare phenomenon, a rich man's son who had succeeded on his own merits—found out that Jake had paid somebody \$100 for an introduction, though he could just as well have walked right in. He thought that this was the only way to gain an entree to a big builder's office.

Jake, who spoke broken English, made us an offer for the granite in the building. We had never heard of him be-

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fore and told him he would have to put up \$5,000 to guarantee his performance. We thought this would be the last of Jake, but the next day he appeared with an old pillowcase. Out upon Ed's desk he shook \$5,000 in worn, greasy \$5, \$10, \$20, and \$50 dollar bills. We found out later that Jake was a great player of Stuss over on Third Avenue and that he had raised the money among his gambling friends to back him in his first big venture in the building business.

We drew up a contract for him to sign. Jake signed it with a cross.

"But Jake," I said, "you haven't read your contract!"

"Mr. Starrett," said Jake, "vat is a contract? If you gyp me, you gyp me; if you don't, you don't."

Shortly after, Beinecke repeated this remark to Charles Evans Hughes and John B. Stanchfield at the Lawyers Club and they both said that it was as good a definition of a contract as they had ever heard in court.

Jake was selling this granite to John Peirce.

One day, Jake rushed into my office looking like a crazy man. His eyes were wild and bloodshot, his hands shook. He was incoherent with rage.

"What's the matter, Jake?" I said.

He pulled a six-shooter out of his pocket.

"That —— —— cheat me!" he burst forth. "I kill him!"

He was going to shoot Peirce unless he got his money. Peirce had been holding back on Jake.

I calmed him down. "Shooting Peirce won't get you your money," I said. "It will only get you the electric chair. What you need is a lawyer, not a gun! Put that gun away, Jake."

Finally, he dropped the gun into the big side pocket of his enormous coat.

Later, he must have made some settlement with Peirce. Anyhow, Peirce didn't get shot.

Among the men who supplied the Fuller Company with sand, gravel, and other building materials was James A. Farley. He owned his own building company. He was a good salesman. His calls were breezy and brief. We all liked him. We never dreamed of him as Postmaster of the United States and boss of the Democratic Party. Once, when I had let a large contract to Farley, the owner told me he had promised to give it to someone else. We had to comply with the owner's wishes. Yet, I had made a verbal agreement with Farley which was just as good as a written one. Farley could make things uncomfortable for me, if he chose to do so. The order was a large one, with a good profit for Mr. Farley.

I called him in and explained.

"Oh, that's all right," he said. "I release you. I understand perfectly. Better luck next time."

He crammed on his hat and was gone.

When Farley became Boxing Commissioner of New York State, he used to invite me to prize fights, where I

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sat in the front row, alongside Jimmy Walker and other Tammany celebrities. When the Dempsey-Tunney bout was proposed, Farley ruled that if Dempsey fought in New York he would have to fight Harry Wills before he could be matched with Tunney, and so the fight was moved to Philadelphia. Farley and I went down together. When we reached the stadium, it began to rain. The rain went on all through the fight, coming down heavier and heavier. We had no umbrellas or raincoats and were soaked. When the fight was over, we pushed out through the roaring, milling crowd of over 100,000 people, and now the rain was really coming down. There were no taxis—nothing. We tramped down the dark, wet road, flagging passing cars, like a pair of hitchhikers.

“If it wasn’t for that —— —— Farley, we’d be home by now!” a man muttered in the crowd behind us.

Farley grinned. We tramped on.

We finally flagged a Ford car, which took us to our railway car at the North Philadelphia station.

OUT of my Ellicott Square days I formed a strong friendship with E. M. Statler. As we met from time to time, we discussed his plans for his new buildings. He had built one or two on which I had not figured. I asked him to promise me that on his next hotel he would give me an opportunity to make him a proposition. In 1915 he told me that he proposed to build a hotel in Detroit to be called The Detroit-Statler and promised that when this work was ready he would notify me and consider my proposal. George B. Post & Sons were the architects.

Relying on Statler's promise, I dismissed the subject from my mind. One day, however, when in Chicago, I had a telegram from my secretary; it was rumored that Statler had closed a contract for the new hotel with the Thompson-Starrett Company. I immediately telegraphed, reminding him of his promise. That was on a Friday. He replied that he would meet me in New York on Monday. At lunch he told me he had had such a favorable proposition from the Thompson-Starrett Company that he must accept it. I had

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seen the plans and knew they were incomplete. I told Statler it was impossible for anybody to make him a definite proposition. If they had done so, there certainly was a joker in it. He told me there couldn't be a joker in it. They offered to build the hotel on a commission basis, guaranteeing the complete finished cost to be not more than a specified amount.

I made a bluff.

"Show me their proposition, and I'll show you the joker."

We went to Post's office and Statler told them he was going to show me the Thompson-Starrett proposition. The Posts were unfriendly at this time and protested that this was unethical. Statler said he didn't care whether it was unethical or not; he proposed to find out if there was anything in the proposition which he had not fully understood.

He handed the document to me. Before I read it half through, I said: "Here's the joker. They guarantee the outside cost of the hotel up to the amount of their commission. They can't lose. If it costs \$100,000 more than this price, you must pay it." I further said, "If you will meet certain reasonable conditions, I'll make you a proposition guaranteeing the outside cost so that in no event will you pay more than that amount."

The complete designs for the public rooms, dining rooms, etc., had not been made, and the specifications gave lump-sum allowances for this work. I knew the cost of dec-

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orated work. The amounts named were twice what was necessary.

"I'll base my costs on the architect's finished drawings," I said to Statler, "not on these allowances, and I'll save you a lot of money."

"Very well," said Statler, "I accept your proposition."

When Statler walked into the next room and told the architects that he had given the contract to me, they reminded him that the Thompson-Starrett representative would be there in fifteen minutes. "All right," said he, "tell him that I have given the job to Starrett." The architects refused. Statler said: "Then I'll do it myself." The Thompson-Starrett man was announced and shown into the reception room. Statler ducked through the door. He was gone about a minute and a half. He came back and said with a grin: "I told them."

When I went to Philadelphia on the Land Title Building, I registered at the Bellevue Hotel, a small brick structure on Broad Street. After registering and depositing my baggage in my room I came down to the lobby and was greeted on all sides by employes, calling me by name—very flattering! In my judgment, the food served in the restaurant was equaled only by that served by J. B. Martin of the old Martin Restaurant, Twenty-sixth Street and Broadway. The hotel was operated by George Boldt, who had previously been steward of a leading Philadelphia club. His success there gave him the backing of club mem-

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bers and the Bellevue Hotel resulted. His reputation at the Bellevue gave him the standing to make his lease with the Astors for the great enterprise at Thirty-fourth Street and Fifth Avenue in New York—the Waldorf-Astoria.

Later, Boldt decided to tear down his Bellevue Hotel in Philadelphia and erect on its site the Bellevue-Stratford. He gave the designing to G. W. and W. D. Hewitt. G. W. Hewitt had been a member of the club where Boldt started. Each Christmas, Hewitt used to give a large tip to Boldt. Boldt's loyalty to Hewitt gave him the commission.

When the architects called for bids in 1905, we made a very careful estimate and were the low bidders. On a subway train, I chanced to meet one of our competitors, who asked me about our figures. He said they were reported to be low. However, he said that Boldt had asked him to call, the following morning, to discuss his proposal. "But don't have any fear about me," this competitor said. "I won't cut my figures a dollar."

Next morning Mr. Hewitt telephoned to me and asked me if I had closed my contract with Boldt. "You had better get busy," he warned. "One of your rivals is moving heaven and earth to get the job."

The following day I called on Mr. Boldt. He told me a competitor had offered to cut his figure \$80,000 to get under ours. "But I told him," said Boldt, "that Fuller was low bidder and I considered it unfair to allow any change in the bids as submitted."

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The man who cut his figure was the competitor I had met on the train!

Boldt was a charming man, with the most ingratiating manners. He had a wonderful memory, recognizing guests, meeting them personally and making them feel at home. He impressed each one with the idea that he was personally interested in the man's comfort. In after years, when he was showing me over the Waldorf-Astoria Hotel, I marveled at the beautiful furniture and its satin coverings. I asked him how he could stand the constant abuse to which it was subjected by guests and how he kept everything looking so fresh and new. He replied: "It is worth much more than it costs in advertising the hotel."

A worse trouble was the immense amount of thieving which went on. Guests stole towels, silverware, and other small articles. He regarded that, however, as a necessary part of the business. His losses from this source were over \$50,000 a year.

In 1905, we put up an office building in Chicago for Charles Rector, the restaurant man. We helped him financially in this enterprise. It was successful, his restaurant business in the basement was profitable and the rents from the offices were substantial. He came to New York and operated the celebrated "Rector's," which was such a rage in the early years of this century. He conceived the idea of building a New York hotel in the Times Square district to be called The Claridge, and he submitted the scheme to Black and me. The figures, from our point of view, prom-

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ised a good profit and he apparently had his financial arrangements almost completed. Black, however, who had an uncanny financial instinct, pointed out to Mr. Rector the hazards of his enterprise. He said, in substance, that the undertaking, so far as the Fuller Company was concerned, was all right; but in his judgment, if Mr. Rector went through with the scheme, he would be a hired man before he died. We turned it down. Rector, badly disappointed, went to another contracting firm, who carried out the work. In the long run, they took over Mr. Rector's hotel. He died broken-hearted—a "hired man."

In 1912, we secured the contract for the Biltmore Hotel. Gustav Baumann, proprietor of the Holland House, was back of this enterprise. A week following the opening, Mr. Baumann gave me an invitation to go with him to St. Louis to meet a prominent brewer who contemplated the erection of a large hotel. Mr. Baumann was confident he could get the job for me, but we never went. The day before we were to start, Baumann was having a drill of waiters in the court of the Biltmore, and for some reason had gone to the upper roof while the waiters were assembling in the court below. The parapet wall on the upper roof was quite low. Baumann looked over into the court, to see if the waiters were assembled, lost his balance, and fell. There were rumors, some of which I read in the papers reporting the accident, that Baumann had committed suicide. I am positive that this is not so. At the interview referred to, he

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PLAZA HOTEL
Henry J. Hardenburgh, architect

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was light-hearted, very proud of the appearance of his new hotel, confident it would be a great success.

The design of the beautiful Plaza Hotel was by Henry J. Hardenburgh, perhaps the most noted hotel architect of his time. I had met him first in connection with building the Willard Hotel in Washington. He also had to his credit Boldt's Waldorf-Astoria, the Martinique on Herald Square, and the Dakota Apartments. I enjoyed Hardenburgh, who was a short little man with a precise way of speaking and the same precision in his sketches. He could show more with less drawing than any other architect I knew, and his work was always so intelligently done that a builder could get everything he needed in order to make an accurate estimate. Bald and somewhat Semitic in appearance, he reminded me of the pictures of William Shakespeare.

I HAD won as a builder success beyond my wildest youthful dreams. Yet, in a sense, I was a victim of my very success; for I was getting farther and farther away from brick and mortar and steel, the things I loved. As the head of a great corporation, with legions of lieutenants between me and the job, I merely passed on contracts and lunched with bankers and steel magnates. I imagine this often happens to men who fight their way upward and then, when they reach the top, find themselves lost and unhappy—detached from the activities that satisfy them.

Then Black induced me to become president of the United States Realty Company. This was a promotion, yes; but it increased my distaste, for it removed me still farther from actual building. All I had to do was to sit around and watch things happen, or pass on real estate matters for which I had not been responsible. I was fed up with it. The whole thing was too big and too inhuman for me. I was no financier or real estate manipulator. I re-

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solved to get out of it and work back, somehow, into a building business of my own.

The immediate impulse came through my brother Bill. Black had made Bill a flattering offer to come into the Fuller Company and had told him that his job would be to follow me as president. With all my affection for Bill, I wasn't sure this was a wise move. Bill had not grown up in the Fuller Company, and I was afraid he might be resented by the men in the company, as an outsider. But Black went ahead and put in Bill as an understudy to me.

Bill was full of big schemes of expansion. There was a tremendous amount of industrial work coming along, and he conceived the idea of doing our own designing in that field. This was unwise, because it would antagonize other engineering companies. If they got a chance, they would probably steer business away from us. Bill rushed on, without consulting anybody, and made a three-year contract with a certain engineering firm to do all such designing. Black heard about Bill's plan and instructed him to cancel the contract. In Florida at the time, I had a wire from Bill that he was resigning, that he couldn't get along with Black. Wiring him to hold his horses, I hurried north. I tried to persuade Bill that the engineers he had tied up with didn't realize what they were getting into. They, themselves, wouldn't want to be involved in a scheme that couldn't possibly succeed. But Bill was obdurate; so was Black. Bill resigned.

He announced that he was planning a construction com-

pany of his own and asked me to join him as head of it. Here was a chance to get away from big financial deals and real estate schemes and back to building skyscrapers.

When I decided to make the change and told Black, he was badly disturbed. What, quit the Fuller Company, which I had built into the largest construction concern in the United States? I tried to tell Black that the thing had grown too large and impersonal for me. But this point made little impression on him.

Then he took another tack. "Paul," he said, "you're too old to launch forth on a new enterprise." I was not bowled over by that argument and he advanced another. "If," he said, "you go out trying to get business under your own name, you'll find it's a different thing from getting business as head of the George A. Fuller Company."

I, Paul Starrett, and the men I picked had made the Fuller Company what it was, and in the process I had so merged myself with the name Fuller that I had no longer an identity of my own—I was no longer Paul Starrett, but merely the head of the Fuller Company! That was his argument. And it was an argument that decided me; there and then I determined to find out whether he was right or wrong. I told Bill I would join him.

So it happened that the climax of my career as a builder—my tallest skyscrapers, my greatest speed—were achieved under the name Starrett.

But before I actually quitted, an amusing thing occurred. I had been conducting several negotiations for new

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business for Fuller which I felt in honor bound to complete before leaving. One of these was the New York Times Annex for Adolph Ochs. I have narrated how we built the original Times Building on the triangular plot at Times Square. We had carried through that job with such satisfaction to Ochs that when I approached the publisher on his new building he was very receptive. He referred me to his architects, Ludlow & Peabody. Bill and I went together to see the architects. Now it happened, unknown to me, that Bill had already been soliciting Ludlow & Peabody on behalf of the new construction company, Starrett Brothers. As I launched into my argument, Ludlow stared at me in bewilderment.

“Are you speaking for Fuller or for your own company, Starrett Brothers?” he ejaculated.

“I’m talking for Fuller,” I said.

“And I’m talking for Starrett Brothers,” said Bill.

The situation verged on the absurd, I suppose, but I went on talking. Then Bill talked. I won the contract—for Fuller.

Almost immediately, I resigned. Bill and I hung out our shingle as Starrett Brothers. Presently Eken joined us. He did so against my advice. I told him that if he stayed with Fuller, he would very probably be made president in the near future, but Eken said he would rather be an underling with me than topman somewhere else. It was fortunate for us that Eken disregarded my advice.

Black’s assertion that I couldn’t get business under the

LAUNCHING UNDER MY OWN NAME

name Starrett was very soon disproved, and, remarkably enough, disproof came through one of his own directors.

Charles E. Mitchell, head of the National City Bank, had joined with Black in urging me not to quit Fuller; but when I persisted, Mitchell seemed to see my point of view and wished me luck. We had been building a house for him on Fifth Avenue and I told him that I would turn over the work to one of the best men in the Fuller organization. "You will not," he said. "You'll take my house with you." So Mr. Mitchell's house was one of our first jobs as Starrett Brothers. Then he gave us a country house at Tuxedo, a branch bank building at Broadway and Canal, another bank building in Brooklyn. It was Mitchell who also gave us the National City Bank in Havana.

All this irritated Black. He thought that Mitchell, as one of his directors, ought to swing his work to the Fuller Company. Mitchell told Black that the only consideration with him was the National City Bank's interest, and he said in addition, that he doubted whether he should continue as director in the realty company. Of course, Black didn't want Mitchell to resign. He hurried down and smoothed the situation out.

Even after I had left Black, I found that I was not really quit of him. I was still bound up with him and his strange baffling personality. He had continuous difficulty with the reorganization of the Fuller Company. From his first selection of a man to head it there arose a serious controversy, and he was uncertain as to the later changes. The

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result was that he frequently came to me to discuss men and methods and to get my advice. Along with this, he continually urged me to return. Then, when Starrett Brothers were going strong, he proposed to buy us out and merge the two organizations. He offered us \$3,500,000.

I refused, telling him: "I have built up a fine business, just as good as yours, and an organization that is far better than yours."

But Black wouldn't give up. He kept at me with new offers. I remember one time when he asked me up to lunch at the Manhattan Club. He had a private room and a most elaborate layout. I was amazed at Black in this interview. He was in his sixties, but he abounded with youth, his eyes sparkled, his smile and laugh had all their old magic. "We'll get together again, Paul, and we'll beat the world," he said. "Don't let's quarrel about terms! We'll put the terms up to Charlie Mitchell. He's a good friend of yours. I'll O. K. anything he says! Come on, Paul, come back and join me again!"

I suppose I fell into a sentimental mood. I felt myself wavering. I said I would talk the thing over again with my associates. That was on a Friday. We made an appointment for another luncheon on Monday. But I never saw him again. The next morning the papers had a front-page story of Black's being found nearly drowned in his bathtub.

Shattered in health, Black went abroad. He came home several months later and, I believe, discovered his affairs

rather involved. But his fortune was by no means gone, he still was a figure of power in New York.

I should not have been surprised if he had made another comeback. But then, one morning, Harry Black was on the front page again. He had shot himself.

I was mystified. Why had he killed himself?

"There is no puzzle about it," a man said who had known him well. "Black had betrayed and lost every friend he had. What else could he do but kill himself?"

But it was not true that Black had lost every friend he ever had. Despite everything, I cherished a genuine affection for him to the very end. I have this feeling for him today.

THE greatest speeds and highest skyscrapers, as I have said, came after I started to build under my own name. They were, also, of the greatest interest to me.

For instance, in 1925 the New York Life Insurance Company decided to erect a Home Office Building upon the site of the old Madison Square Garden. The ground area was 200 by 450 feet, and the height was to be forty stories. It was a contract worth trying to get.

After the news became public, but quite some time before any formal announcement was made, William Hamlin Childs invited me to join a party going to the Ball Peak Club in New Hampshire. D. P. Kingsley, president of the New York Life, Frederick H. Ecker, president of the Metropolitan Life, Percy Johnson and Lawrence Abbott, directors in the New York Life, and several other prominent New York business men were in the party.

At this time I was doubtful about making any attempt to get the New York Life contract. We were a new company; I figured it a long shot and hardly worth the effort

on account of the slim chance of success. Mr. Percy Johnson urged that I make a proposal, and told me I had as good a chance as anybody else. His encouragement was a considerable factor in our decision.

Cass Gilbert received the commission for the plans. My experience with him had been that he was difficult to get along with, very exacting and unreasonable. As a minor example, when we built the Union Club on Fifth Avenue in New York, we quarreled with Gilbert over changes in design which had increased our costs unjustifiably, and after the building was finished and the club had moved in, Gilbert telephoned to me about a dynamo whose vibrations were disturbing the slumbers of the members in their leather chairs. I told Gilbert I would go up and see what the trouble was.

"Remember," he warned, "you can't go in the front door!"

"How'll I get in?" I demanded.

"Tradesmen's entrance!"

"Tell 'em to go to hell," I said, and as far as I know, the members of the Union Club continued to vibrate.

So for a time I had thought that I would make no attempt to go after the New York Life contract. But I called upon Mr. Kingsley, the president, and had a satisfactory talk with him.

At the time, he was not fully decided about the type of building they would erect. He showed me plans which Mr.

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Gilbert had submitted, showing a square building over the entire lot, without light courts.

Mr. Kingsley asked my opinion of the plan and I objected to it on account of the dark spaces in the center; also there was the problem of ventilation. He said that this had been thought of and mechanical ventilation was to be provided. Mr. Gilbert had made the statement to him, to which he was partially converted, that artificial light in a building is cheaper than daylight. I replied, "Yes, just as copper is cheaper than gold." No officers of his company would want the dark space in the middle of the building, in spite of the fact that it might be perfectly lighted by electricity. It would be the clerks, who couldn't help themselves, who would have to work in these interior spaces.

This interview occurred some months before the plans were completed and submitted to contractors. When invitations were issued to them, I called upon Alfred L. Aiken, vice-president of the company and vice-chairman of the building committee. I arranged to have Mr. Aiken meet my partners and we made our sales talk. The plan was for bidders to name a lump-sum fee for their services—the New York Life Insurance Company supplying the money as needed.

The figures went in, and two or three days later I was called before Mr. Aiken and Mr. Thomas A. Buckner, senior vice-president. The company had reserved the right of accepting any proposition. I learned that we were one of the two highest bidders. Mr. Gilbert objected strenu-

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THOMAS A. BUCKNER,
Chairman

(Blackstone Studios)

ALFRED L. AIKEN,
President

(Blank-Stoller, Inc.)



(NYLIC Review)

DARWIN P. KINGSLEY
(Deceased)

THREE PRESIDENTS OF THE NEW YORK
LIFE INSURANCE COMPANY

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ously to the employment of the other contractor whose bid was the same as ours. I was asked if I would accept a rather substantial reduction in our fee, as there were lower bids. I accepted the proposition and within a few days we were awarded the contract.

Up to the time we got the contract, I hadn't seen any detailed plans and didn't know whether or not the owners had gone ahead on Gilbert's original idea of an unlighted, unrelieved box of a building. Then came our first meeting with the building committee. There on the table lay the floor plans. I saw at once that here was the same solid box, no courts, all the inside rooms to be lighted and ventilated artificially. Buckner looked at me and said:

"Starrett, what do you think of our floor plans?"

"Have you any doubts about them?" I countered.

"I don't say that we have," he answered, "but we have employed you not only to build our building but to give us your help in any way you can. You've had a lot of experience in building. Your judgment on these floor plans is part of your service to us. Gilbert is building a monument to himself, but we've got to live with it."

I thought of the great Cass Gilbert and his probable wrath if I criticized his plans; but after all here was my client asking for my honest judgment.

"Yes," I said, "he's building a monument to himself, but a mausoleum for you fellows."

"What do you mean?" said Buckner.

I told the committee what I had told Kingsley. Artificial

lighting wasn't necessary. Break the building up with courts, and they could get sunshine inside. As for proper ventilation in a building of this size, it would be almost impossible. The interior must be equipped with enormous air ducts, and big fans operating continuously, and if the owners should have occasion to shift the partitions, these ducts would have to be shifted too, with great trouble and expense.

I told them that a building like this for the New York Life Insurance Company should grow outwardly from its purpose. First, the interior should be engineered for its practical use, and then the beautiful exterior added afterward.

"But the steel is all ordered," said Buckner, "and it's being fabricated according to these plans."

"Well," I said, "then the first thing to do is to stop that steel!"

The committee stared at me. I could see that they thought this was going pretty far. "You'll have to stop it," I insisted, "if you want a building you can live with!"

The committee did not fall in with my proposal at once. We argued back and forth for some days.

Meantime, I sent out for reports on the ventilation of a number of buildings which Gilbert had designed. I turned these reports over to Aiken, chairman of the committee.

Then Aiken told me that the committee had stopped the steel.

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“Now what do you suggest?” said Aiken.

I told him I wanted a little time to study the matter. I located a lot of exactly the same size not far from the New York Life site and laid out a plan. I went back to our offices, made a rough sketch of my scheme, and turned it over to Matsui, a clever Japanese draftsman in our organization. I told him to develop a ground-floor plan and lay out the upper floors where the setbacks were required by law. Forty-eight hours later the man brought in the finished drawings. He had worked night and day and had done a beautiful job. I hurried these drawings up to Aiken. In the interval, Aiken had summoned Henry C. Myer, of Myer, Strong and Jones, one of the best mechanical engineering concerns in New York. Myer condemned Gilbert's plan even more severely than I had done.

After considerable discussion, which lasted several weeks, Mr. Kingsley decided to change the plan and so instructed Mr. Gilbert. In this decision Mr. Kingsley showed great courage. He changed the finished plans of Gilbert, who had extraordinary prestige and was one of the foremost architects in America. The result has justified Mr. Kingsley's decision. Gilbert adopted the new plan as his own, but discharged the man in his office who developed it.

We were now ready to go ahead under full steam and we made rapid progress. We had one big problem, which was to get out the immense amount of stone within the time required. It was the largest stone order we had ever

had, 480,000 cubic feet, all to be accurately cut, delivered, and set into place within one year. The local stone contractors, talking it over among themselves, decided that no one firm could produce the stone under the time limitations. They divided it up among four or five and put in a combination figure which, in our opinion, was much too high.

We could make no progress in negotiating with them. We were acquainted, however, with a stone contractor in Newark, a good practical man who had a fine yard and a good reputation. We talked over the subject with him. He convinced us that he could do the whole job himself and we made a contract with him at a much lower figure than that of the combination. While we had some minor difficulties, he supplied the stone practically as needed and the building went on to completion without a hitch.

We found the New York Life Insurance Company a wonderful client to work with. They gave us their confidence and we received at the end fine letters from Mr. Kingsley and Mr. Buckner expressing satisfaction with our work.

I regard this building as one of the finest in the United States. Mr. Gilbert, the architect, was an enigma to me. When the plan was changed, he apparently lost all interest. He went to Europe and turned the designing over to his office. His head draftsman, Mr. Stickel, was a remarkably competent man and a good designer. Mr. Gilbert's

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enthusiasm did not seem to revive until toward the end of the work, when the exterior was nearly completed. He did, however, take great interest in laying out the executive offices of the company. Mr. Kingsley was much interested in these details.

Mr. Gilbert's skill as designer and draftsman was illustrated at one of our meetings. Mr. Kingsley said he could not visualize the appearance of the main office corridor when completed. Mr. Gilbert picked up a pad of white paper, such as was laid before each member of the committee at the meetings, and made a perspective sketch looking from one end of the corridor down to the other, where it ended with some columns and grill work. I think he didn't work over twenty minutes on this complete sketch, showing the walls and ceilings, and actually putting the furniture in place, together with human figures to give the scale. It was a wonderful performance, and I was reminded of a similar feat by my brother Theodore many years before. I asked to be allowed to take that sketch with me. Mr. Gilbert said he would take it to his office, photostat it, and send each member of the committee a copy. I now have this picture framed, hanging on my office wall.

It was hard for me to understand Mr. Gilbert. I had the greatest admiration for his eminent artistry in his profession. He made a deep impression on clients. Nevertheless, he seemed to subordinate all the important practical considerations to the artistic ones. I was torn between my ad-

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GILBERT SKETCH

miration for his skill and my surprise at his disregard of efficiency and its importance. One day Aiken said to me, "Starrett, you are a most inconsistent man. You come over here and argue and disagree with Mr. Gilbert; the very next time you come in, you praise him to the skies."

Toward the completion of the job I made an argument before the building committee that, in view of the extra work we had done, beyond anything contemplated originally, we were entitled to have our fee reinstated at the

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amount named in our original proposition. Mr. Aiken said this would be given careful consideration.

For some time I heard nothing further of the matter. Then one day I met Jesse Straus on the street. Jesse was one of the directors of the New York Life.

"Hello, Paul," he said. "I just voted for a substantial increase in your fee."

A job which gave me high satisfaction in these later years was the new building for the McGraw-Hill Publishing Company, the world's largest industrial and business publishers. Naturally, the owners were in touch with the latest technical developments in design and building. They wanted an efficient building to house the editing and printing of their magazines and books, and they knew how to get it.

Following the modern manner, they chose architect and builder at the same time. Then they formed a conference group which studied the problems, just as a manufacturer studies the design of a new product by bringing together his planning, cost-analysis, production, and sales departments. Out of this grew a building admirably suited for the publisher, ultramodern, yet within the estimates.

A building for another insurance company which we built in these years was interesting in a quite different way. It was the Mutual Benefit Life Insurance Company in Newark. Here I made friendships which I cherish as

NEW ADVENTURES IN BUILDING



(P. O. Valentine)

NEW YORK LIFE INSURANCE COMPANY BUILDING
Cass Gilbert, architect

CHANGING THE SKYLINE

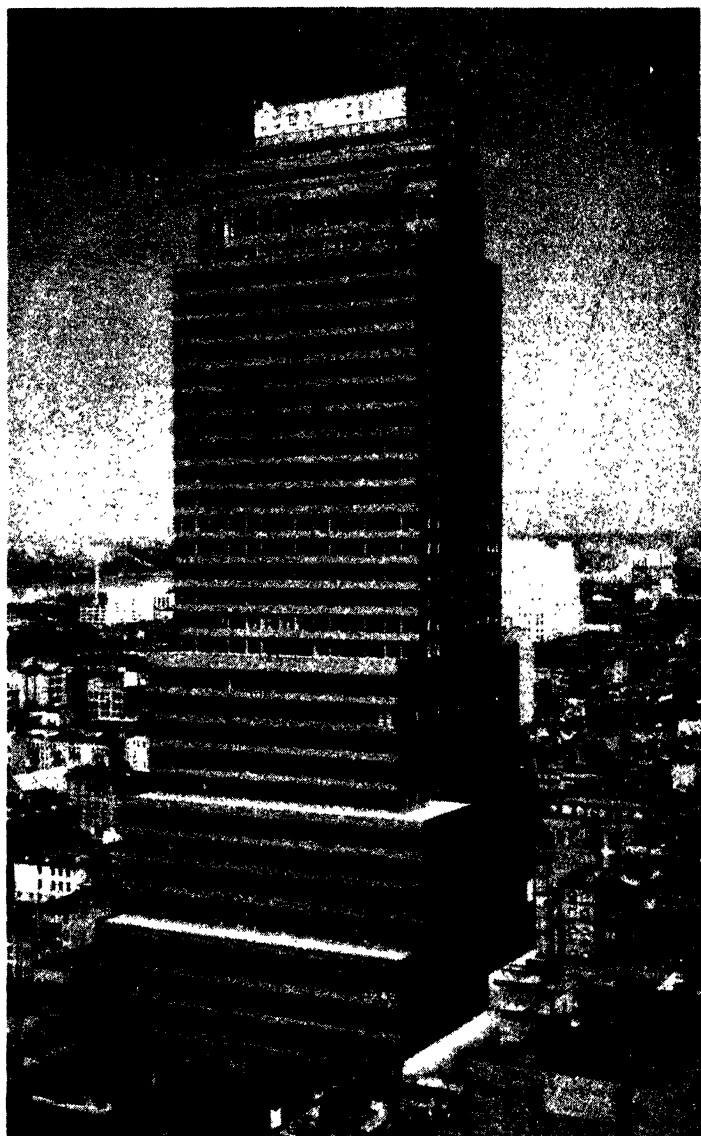
among the happiest recollections of my life. I had first met Mr. John R. Hardin, the president, through the Bamberger store contract in the Fuller days.

In the Newark insurance company's undertaking, I was struck particularly by the way the owners planned their building and gave out the contract, and by their relationship to us, the builders. First of all, the Mutual did something which I should think more owners would do if they are themselves to occupy the building. These insurance people asked two architects—one a New York firm, one a Newark firm—to submit rough sketches of the proposed building. These sketches were hung up in a corridor of the office. Everybody in the company, from president down to office boys, was invited to make criticisms and suggestions on the arrangement of the rooms, the size of rooms, corridors, exits and entrances, elevators, lighting, stairways. It was evident from these criticisms that, of the two, the Newark architect's plans were by far the better suited to the purposes of the insurance company.

Having picked the Newark man, the insurance company asked him to draw complete floor plans for the whole building. Then blueprints of these plans were hung up for further criticism by the employees. This brought many more ideas. There was even a suggestion from the porter for the better location of a broom closet.

As a result, there were no changes made during construction and, the owners tell me, no changes have been considered necessary since. Builders are so used to

NEW ADVENTURES IN BUILDING



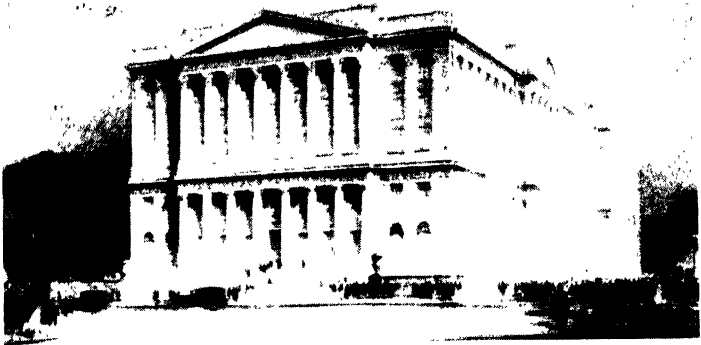
McGRAW-HILL BUILDING
Raymond Hood, architect

changes in the plans during construction that they are surprised if there aren't any. Often these changes are costly. Then, after a building is finished, you will hear the owner say, "I wish we'd done this. I wish we hadn't done that." Sometimes, everything is torn up a year or so later in order to do or undo something that wasn't or was done, and stenographers and vice-presidents get their eyes full of plaster dust and their ears full of riveting and hammering. Why don't other owners proceed as these Newark people did?

Their method of picking a builder was equally original and independent. Even before plans were made, they had asked five leading builders, of whom our firm was one, to come over and have a talk. Each builder was asked: (1) whether he would cooperate with the architect in working out the plans, (2) how much work he would do himself and how much he would sublet, (3) what fee he would charge. After the plans were ready, these same five builders were asked to look them over and make an estimate of maximum cost. Another question was this: "If you complete our building for less than this maximum, how should the difference be divided between you and us?"

We got the job. I didn't know at the time just why, but afterward I found out. It was because we had named the highest fee and the lowest percentage of work we would do ourselves! My policy, as time went on and subcontractors became more proficient, was to sublet as large a proportion of the work as possible. I conceived of the general

NEW ADVENTURES IN BUILDING

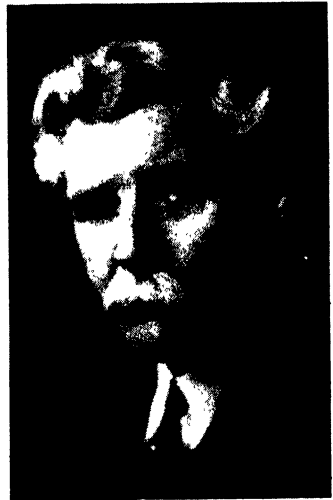


MUTUAL BENEFIT LIFE INSURANCE
COMPANY BUILDING—John H. and Wilson C. Ely, architects



(Orren Jack Turner)

EDWARD E. RHODES,
Vice President



(Asch)

JOHN R. HARDIN,
President

CHANGING THE SKYLINE

contractor as the commander-in-chief of the army of attack and the subcontractors as his commanders of brigades or divisions. The general contractor was responsible for the proper completion of the whole, just as the commander of an army is responsible for the winning of the battle; and the fact that he did not have to do all the work himself gave him, I believed, some advantages in planning and pushing the job as a whole. Other builders had other notions. On this Newark job, the proportion of work the five builders stated they would do themselves ran from 80 per cent down to 20 per cent, and the 20 per centers were Starrett Brothers.

Edward E. Rhodes, vice-president of the insurance company and chairman of its building committee, said:

“Our idea is that the builder’s recompense should be his fee. If he undertakes to do a large proportion of the work himself, he will try to make a profit on the various divisions of the job. That is, he will have no particular incentive to reduce our costs. But if he lets out a large share of the work to subcontractors, he introduces the element of competition all round—into the carpentry, the lighting, the plumbing, and so on—and this will certainly tend to reduce the total cost. We believe that by paying a high fee to the general contractor we shall get a firm who will work in our interests, and as a result we shall get our building at lower cost.”

As it turned out, they did. We completed the building at a total of \$5,600,000—considerably under our maxi-

imum figure, and, as I remember it, we got 10 per cent of the savings. Some of these economies resulted from our suggestions to the architect. For example, he had specified that the piping in the basement be put under the floors. I suggested that it be hung from the ceiling, making it more accessible in case of leakage and saving costs in construction.

The point regarding the proportion of work to be done by the builder himself came up again, not long afterward, in a dramatic way on the Empire State Building.

Our job for the Mutual Benefit led to other important work for Starrett Brothers in Newark. Charles L. Farrell, president of the largest bank in Newark—the National Newark and Essex Bank—was a director in the Mutual Benefit, and he carried so favorable a story of our work to his bank directors that when the decision was made for a new building for the bank, we got the contract without competition.

At about the same time, while we were busy with these buildings, we carried on two operations of such an unusual character that they justify special mention, since they involved extraordinary methods.

The Abraham & Straus store in Brooklyn occupied almost an entire block. We were to remove a series of old four- and five-story buildings having one basement apiece and to raise a new ten-story building with three basements.

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The owners required that business be carried on without interruption.

Four small sections of the basement were turned over to us. We sank our caissons fifty feet, put on them our column bases and then laid down temporary flooring. Business was resumed at these points and four more sections were turned over to us. Thus we carried on until the Christmas business was over. Then, one entire unit for the new building was undertaken; we simultaneously constructed a ten-story building above and a three-basement area below. The first unit was ready on July 5; and under this procedure the entire store was made ready for business on September 1, a month in advance of our promised date.

The seventy-story Bank of Manhattan Building at 40 Wall Street required methods still more original. We took the site in May, 1929, and had to finish by the following May. The existing buildings were of heavy masonry, with foundation walls five feet thick, in some cases, and very difficult to remove. Obviously, we could not complete on time if we waited on the wrecking. We decided, therefore, to install our caissons under the old buildings, using them to brace and hold our work and to act as a weight against which we could use our jacks. Here the wrecking above was carried on simultaneously with the foundation work below. With three shifts of men working seven days a week, we were able to put tenants in the new offices on May 1, 1930. Our operations were not made easier by the nar-

row and congested streets, with complete lack of storage space outside the building line. We had to make the most careful plans for delivery and distribution of materials, but enough on this subject is said elsewhere. I had subsequently to answer criticism that we wasted money to save time; our entire expense in overtime was less than one month's gross revenue of the new building, and we saved several months. Of all the construction work which I have handled, the Bank of Manhattan was the most complicated and the most difficult, and I regard it as the most successful.

The skyscraper was attaining its climax. The Chanin Building was completed; the Chrysler Building was going up. When plans for the Bank of Manhattan Building were announced, an attempt had been made to learn the closely guarded secret of its height, and Chrysler added a 145-foot flagpole, but in vain. The Bank of Manhattan was taller. The victory was shortlived; Henry Doherty, the utility magnate, gained more accurate information and his new building exceeded our seventy stories by a few feet—or, perhaps, it was inches.

But we had already begun work on the skyscraper which overtops them all.

A WELL-PLANNED story should have an effective climax. So should a well-planned life. It has been my rare good fortune to see my career come to such a climax. My life as a builder of skyscrapers and the skyscraper itself had moved forward together with accelerated speed; together they now reached a peak. I had built quickly. But now I was to build more quickly than ever before. I had experienced labor troubles. But now I was to meet the worst I had ever known. I had built tall buildings. Now, I was to build the world's tallest—not only the tallest one but one which expresses most completely and honestly the skyscraper idea, whose beginnings I had seen fifty years earlier.

The story of the Empire State Building is truly an epitome of all that has preceded. In a few pages it tells all the spirit, the imaginative and technical daring, and even some of the frenzy, that animated the decade of which it was the culmination. A project which began as a speculative venture was transformed into a real and stable un-

dertaking, which will stand as an ultimate glory in New York's skyline.*

The site, that of the old Waldorf-Astoria on Fifth Avenue between Thirty-third and Thirty-fourth streets, was one of the most valuable in the world. Its possibilities had originally attracted the attention of Floyd De L. Brown, a speculative builder who, in 1928 and 1929, successfully completed a skyscraper for a broadcasting company at probably \$1,000,000 profit. The Waldorf-Astoria Hotel was moving farther uptown, and Brown bought the old building and site for \$14,000,000, putting down \$100,000 earnest money. Brown had in mind a large loft building. He engaged an architect to make sketches, drew up an estimate of the probable earning power of such a building, then went out to try to raise money to consummate the deal. The Chatham & Phoenix Bank lent him \$900,000

* The size and height of the Empire State Building are not, I think, its most interesting or important features, but a brief description of them may satisfy the curiosity of some readers. I am asked these primary questions thousands of times. The building covers 197 feet on Fifth Avenue and 425 feet on the side streets, 33rd and 34th; it therefore occupies about 84,000 square feet, approximately two acres. It contains eighty-five office floors and, with the mooring mast above it, rises 1,245 feet above the street, the mooring tower being equivalent to seventeen stories in height. It has about thirteen more stories than any other office building in New York. The building is lighted by 6,400 windows and is served by sixty-seven elevators. It weighs 616,000,000 pounds, including 134,000,000 pounds of steel. When fully occupied, it will have a population of 20,000 persons; this would provide office space for a city of about 60,000. The total investment is approximately \$45,000,000.

One question is very often asked of me. "How is the Empire State Building anchored to the earth?" When we consider the weight of the building as given above, 308,000 tons, it is apparent that the structure requires no anchorage.

to make up his first payment of \$1,000,000. Now he had to get a second mortgage to meet his second payment. He couldn't raise the money, and a syndicate of prominent men—including Edward Hutton, Louis G. Kauffman, president of the Chatham & Phoenix Bank, Sam McRoberts, John J. Raskob, and Pierre du Pont—was organized to take over the contract and get title to the property. Brown was paid back what he had put in..

The syndicate formed themselves into the Empire State Company and selected as their president former Governor Alfred E. Smith.

These men entirely changed Brown's plans. They decided on an office building—one that would soar above all others. The Metropolitan Life Insurance Company had made a tentative agreement to loan Brown the money to put up his building, if he got possession of the site. Now the syndicate went to the Metropolitan and asked for \$27,500,000—\$10,000,000 more than it had promised Brown. Mr. Ecker, president of the Metropolitan, gave it to them without batting an eyelash.

A distinguished firm of architects, Shreve, Lamb & Harmon made preliminary sketches, based on the amount of money the owners planned to spend.

Now things began to fit together. The Empire State Company asked five leading builders to appear before the directors and make proposals. Kauffman, of the Chatham & Phoenix Bank, had appointed R. H. Brown, one of

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ALFRED E. SMITH



ROBERT C. BROWN

(Blank-Stoller, Inc.)

his vice-presidents, to arrange all this. Brown was an old friend of mine. Years before, he had tried to sell steel to me, and later when he went into the bank, he had come to me and asked if I could find a site and build an apartment house for Kauffman. So I had established relations of confidence with the group. Now Bob called me up, told me about the five builders' being invited to come up, in turn, on a certain morning and have their say, and asked which I wanted to be—first, middle or last. Naturally, I said last.

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Before the interview came off, Bob called me up again and said:

“How much overtime did you fellows use on the Bank of Manhattan? A rival of yours just told me that you spent money like drunken sailors down there on overtime.”

I told Brown this was untrue. I said that we had spent money on overtime but even with it, we were under the estimate. Furthermore, I said, we would have been justified in using more overtime than we did, because it was worth \$2,000,000 to the owners to have the building ready for May renting.

“I am glad to hear that, Paul,” he said.

The day arrived. The interviews were to take place in Governor Smith’s office in the Biltmore. I was keyed up as I had never been before in my life. This was to be the most magnificent skyscraper ever erected in the world. I felt that I had been working toward this job all my life. I *must* get it.

Bill and I went over together.

We sat outside and saw our rivals go in and come out. I tried to feel cool and collected, but my nerves were jumping. When we were called in, there sat Al Smith at the head of the table, and around the table John Raskob, Pierre du Pont, Kauffman, and the other men so dominant in New York’s business life. At the same table sat Shreve, the architect. Shreve told me afterward that his eyes fairly bulged out, all through the interview, at the thought of the millions represented by those men around the table.

"Well, what have you got to say for yourself?" Smith asked me.

I said that I had come over to prove to them that we were the best builders to put up the Empire State. We were the only leading firm in New York whose members had been educated as architects before going into the building business. We had just built the New York Life, for which we had been chosen by one of the most exacting owners in existence. We had done important building for the Metropolitan Life, largest insurance company in America. We had just made an unprecedented speed record on the Bank of Manhattan. I said that on their building, because of the value of the site, the money invested, and the potential revenue from the building, speed was supremely important. "Our fee is insignificant compared with the amount we will save you by shortening the time of construction."

"How much is your fee?" the former Governor said.

"Six hundred thousand," I said.

"That's your asking price," he said.

"No, that's our real price!"

"But you fellows will get a lot of advertising out of this," the Governor said. "Think of it, the biggest building in the world, and your name down there on the fence! Advertising is a wonderful thing, Starrett! Look at Dobbs. Dobbs gives me all my hats, and when I go out and make a speech I hold up the hat so that people can see the name

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Dobbs on it! That shows what value Dobbs puts on advertising!”

Everybody around the table laughed at that and I did too, but I said:

“I know it would be a wonderful thing to build this building, but I’m through with building buildings to advertise myself. I’ve been in the business forty years, Governor, I don’t need that kind of advertising.”

“How much equipment have you got on hand?” he asked.

This was a crucial question. It proved the advantage of having the last interview. Some other builder, I knew, must have been telling the committee what a wonderful lot of equipment he had on hand to handle the job.

“Not a blankety blank thing,” I said. “Not even a pick and shovel!”

The men around the table pricked up their ears and stared at me.

“Gentlemen,” I said, “this building of yours is going to present unusual problems. Ordinary building equipment won’t be worth a damn on it. We’ll buy new stuff, fitted for the job, and at the end sell it and credit you with the difference. That’s what we do on every big job. It costs less than renting second-hand stuff, and it’s more efficient!”

“How much of the work will you do yourselves and how much will you let out?” asked the Governor.

Some other fellow had been telling the committee what

a large proportion of the work he would do himself! I could see that instantly.

"We won't do anything that we can sublet to advantage!" I shot back at him.

Again a look of surprise went around the table.

"How long will it take you to do the job?" asked the Governor.

I told him that we had made a careful study, and to tear down the hotel and put up the building they had in mind would take about eighteen months.

"It took five years to build the New York State Capitol," said the Governor, "and not so big a building either."

"Well, Governor," I said, "we'll show you the difference between building for the government and building for a private company."

That was about all. The Governor thanked me, and we got up and left. Both Bill and I felt encouraged. We both hoped that my argument about new equipment meant victory.

I had hardly got back to my office at 101 Park Avenue, three short blocks away, when a call came in from Governor Smith's secretary to say that Smith and Shreve were coming over to see me.

When they arrived and had seated themselves, the Governor began:

"Paul, we have decided to have you build the building for us."

"That's fine, Governor," I said.

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"And," he hitched nearer and clapped me hard on the knee, "we're going to give you \$500,000 for it!"

"But Governor," I protested, "my price is——"

He laughed. "I knew you'd like it."

"Well, Governor, I feel pretty sure that in \$600,000 you are only paying me a fair fee, but I suppose as a good businessman you have to pare something off. I'll tell you what I will do. If you will make some minor changes in the contract, allow us to carry our own liability insurance, and provide the money as we require it, I'll say Yes."

Smith's reply was prompt. He agreed to my conditions.

After that, the drafting of the contract was a matter of only a day, but it gave me a striking evidence of Governor Smith's capacity in affairs. When the documents were laid before us, I found that none of the agreed changes was incorporated in them.

I said, as we came to each point in question: "Governor, that isn't what we agreed on." Instantly, he turned to his lawyer and said: "No, that was altered." Then he dictated to his stenographer in the briefest language the modifying clauses, some of which were highly technical.

One thing more needs to be said. Although the Governor had made a substantial reduction in our fee, I was very glad to get the job at any price. The depression came, all construction in New York dropped to zero, but we were at work on the biggest building in the world.

Just prior to the award, an odd thing happened. Three well-known politicians called on me and said that they had

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an "inside" with Governor Smith and offered to procure the contract for us for a cash payment to them of \$50,000. I told them to go to hell, and then 'phoned Bob Brown. A little later, Brown called me back and said: "I have just talked with Governor Smith and he told me to tell those guys to go to hell."

The singular unanimity of our thoughts in this instance was one that prevailed throughout the whole job. I doubt if there was ever a more harmonious combination than that which existed on the Empire State, between owners, architects, and builder. We were in constant consultation with both of the others; all details of the building were gone over in advance and decided upon before incorporation in the plans.

The wrecking of the old Waldorf-Astoria Hotel was an interesting feat—one that was not without a certain regret. Here the beneficent Oscar had presided, and here Peacock Alley had preserved for decades its silk-and-satin splendor; and we had to tear it all down.

The traffic around this busy corner necessitated our interfering with the street as little as possible. Diagonally opposite was Altman's store; all of Thirty-fourth street was a crowded retail center. We built chutes down the center of the building. After providing amply for the protection of pedestrians, with scaffolds around the top of the building to catch any falling material, we ripped down the outside walls and dumped them down the inside chutes

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into trucks. The rubbish we hauled to scows and carried out to sea.

We removed from the old building about 18,000 tons of structural steel, which was sold for the benefit of the owners at a substantial price. We also removed debris amounting to 16,000 truckloads. On this wrecking operation our working force reached a peak of 700 men.

We wanted to salvage the mahogany woodwork, but because the union required that carpenters take it down, the cost was prohibitive. It was a great pity to smash up beautiful mahogany door trim with sledge hammers, but there was nothing else to do. The doors themselves were taken off and over 1,000 were shipped to Florida, to be used in a new institutional building. We had more than 1,000 requests from souvenir hunters from every state in the Union, some even from abroad. A man in Keokuk wrote asking for the iron railing fence on the Fifth Avenue side; a Connecticut woman wanted another railing for her country house; a man from Maine wanted a flagpole. Somebody in Washington pleaded for stained-glass windows. Other people asked for fireplaces, pieces of marble or brick, lighting fixtures. One man and his wife were made happy by getting the key for the room they had occupied, many years before, on their honeymoon.

All the mural paintings were salvaged, including the large one from the ceiling of the ballroom, along with some of the interior woodwork, for possible use in the new Waldorf-Astoria Hotel at Lexington Avenue and Forty-

ninth Street. Aside from these pieces, everything went to the dump.

Out of consideration for the adjacent shops and their merchandise, we made special efforts to minimize dust by the free use of water, and when we had finished, we received an expression of gratitude from Colonel Friedsam of Altman's; he declared that they had looked forward to a great deal of discomfort from the wrecking of the Waldorf-Astoria, but to their surprise had experienced none at all.

In four months, we had the hotel down completely and our men were swarming into the excavation. A month later, we began to set steel.

In construction work, there are established records of time which are marks to shoot at; for steel, three and a half stories per week; for brick walls, a story a day; for stonework one to two stories a week. It was clear to us at once that on the Empire State we could never finish the building on time by any such progress. We decided to discard all these plans of operation and determined to erect the Empire State at the rate of *a story a day*. For the owners and for ourselves we must maintain this schedule.

When I say that we did actually maintain this schedule, I must add that we should have failed, had not the architects and the owners cooperated with us in a really remarkable way.

Never before in the history of building had there been,

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and probably never again will there be an architectural design so magnificently adapted to speed in construction.

The fundamental fact of the design was simplicity—a straight shaft rising, with a few setbacks, from the sixth to the eighty-fifth floor. An interesting point about that design, by the way, is the matter of its height. When you stand in Fifth Avenue and gaze up at the soaring tower of the Empire State Building, are you not struck by the beautiful proportions of the whole? Does not its height seem perfect in relation to its other dimensions? When the architects made their preliminary sketches, they found that eighty-five office floors reached about the height which could be constructed with the money available. Studies of elevator equipment showed that eighty-five stories also set about the limit of efficient and economical operation for elevators that could be installed in a building of this ground-floor area. In other words, the height, the beauty of the Empire State Building, rose out of strictly practical considerations.

Given this design, our job was that of repetition—the purchase, preparation, transport to the site, and placing of the same materials in the same relationship, over and over. It was, as Shreve the architect said, like an assembly line—the assembly of standard parts.

But that general simplicity in the design of the whole was underlaid by innumerable simplicities and economies in detail, which the architects worked out in collaboration with us.

For instance, the stonework and its brick backing were carried directly on shelf angles attached to the columns. The result of the combined designing of steel and stone was a reduction of quantity of stone to one cubic foot for every 200 cubic feet of building, whereas most other modern buildings curtained with stone have four times as much. The design also greatly reduced the amount of cutting and fitting of stone on the site. All the stonecutting was done at the yards, before being brought to the site, and because there was a large number of pieces all alike and of simple shapes, we had one-third of the stone ready for setting before delivery to the site began.

By the way, the original design had specified limestone for the lower four stories, then brick with limestone trimmings above. Raskob asked me in one of our conferences how much more it would cost to use limestone all the way up. I had the figures ready. He moved that we use limestone, and the idea was approved at once. It added immeasurably to the beauty of the Empire State Building.

Earlier in this narrative, I have explained that in the opening days of steel-frame construction, the outer walls of the building became merely a wrapping, or covering, for the steel; but architects continued to set windows back into the masonry wall, so that the outer walls had an appearance of thickness and carrying strength which they did not really possess. In the Empire State, however, the architects brought the windows out flush with the outer surface, in fact slightly outside it. They not only admitted,

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but asserted, that the outer walls of a building are mere curtains, supported by the steel structure within. In this sense, the Empire State is the dramatic and complete realization of the skyscraper development, whose beginnings I had seen as a lad in Chicago.

Steel could not be fabricated fast enough at any one plant to meet our schedule. Our subcontractor for steel, Post & McCord, arranged with two of the largest plants in the country to fabricate alternate sections—each section two to eight stories in height.

The building contains 67,000 tons of steel, the largest order ever awarded for structural steel for building use. We planned and executed our steel schedule with such care that the steel went direct from the cars to its position in the frame. We set 10,000 tons a month and finished steel erection fourteen days ahead of schedule.

We handled and distributed all material by industrial cars on narrow-gauge tracks, running completely around the perimeter of the building on each floor, with the tracks extending across the platform of the hoist, so that cars loaded, for instance, in the basement, could readily run on the hoist and off at the proper floor and deliver at almost the spot where the material was to be used. Brick arriving at the job on the first-floor level was dumped into large bins in the first basement. These bins, with inclined bottoms, allowed the brick to slide through doors and drop into industrial dump cars after being thoroughly wet down. The cars deposited the brick alongside the brick-

layers, without having been handled from the time they came into the building until the bricklayer placed them in the wall. Under the old method of wheelbarrows, we could hoist only two barrows containing 100 brick per trip on a standard platform. With the industrial car and the same hoist, we carried 400 brick per trip.

Mortar was hoisted at the rate of 21 cubic feet per trip in the cars, as compared to 7 cubic feet per trip in barrows; other materials showed similar savings in time and cost. There was, of course, a huge labor saving through decreased handling, fewer hoists and hoistmen.

For the setting of our stonework, we cut out altogether the customary derrick. The stone trucks drove into the building with the stone in crates, which we call skips or slings. Marked for its proper section of the building, each crate was lifted off the truck by a small crane, operating from a monorail on the ceiling, and delivered to the flat-cars of the industrial railway. Taken to the proper floor, it was unloaded at almost the exact location in which it was to be set. Two hoists handled all the stone for the building, not only eliminating a large number of hoisting derricks and engines but, since the hoisting was inside the building, doing away with a grave source of danger to the public.

We not only beat the stone-setting schedule by fourteen days, but for one period of ten consecutive days averaged 1.4 stories a day.

As a result of efficiency methods, short cuts, and collaboration with the architect, we built the Empire State

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Building for something like \$2,000,000 under the original estimate.

At peak of construction, we had on the job some 3,500 men in fifty different trades, with a pay roll of \$250,000 a week. One of our biggest problems was getting these workmen to the upper floors quickly, to avoid loss of working time. At the beginning, we salvaged four passenger elevators from the old building and installed them in temporary positions in the new framework. Then, as the building went higher, added two high-speed hoists, equipped with every safeguard.

A related problem, and on this job one equally serious, was feeding the men. To bring down the entire gang of 3,500 and send them up again would cost too much in time. We found an experienced restaurateur in the vicinity, and made a deal with him. As the building climbed, we built cafeterias for him at successive floors, the first one at the third floor, then one at the ninth, the twenty-fourth, the forty-seventh, and the sixty-fourth floor. Completely equipped by the restaurant man, these cafeterias remained throughout the job. They served food of the finest quality. The restaurateur made a fair profit and the men bought good food at cheaper prices than they could have found outside the building.

The great height of the Empire State Building (1,245 feet, 225 feet higher than the Eiffel Tower) brought about some interesting adjustments, to take care of the behavior of materials under unusual conditions.

THE CLIMAX



(Knickerbocker Photo Service)

EMPIRE STATE BUILDING

Shreve, Lamb & Harmon, architects

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A great many engineering problems confront the builder of a skyscraper. Calculations as to height are made accurately from the drawings, but when steel is erected and the load imposed on it, there is a shrinkage in its length, owing to compression. This shrinkage is small; nevertheless, in the Empire State Building it amounted to more than six inches in the total height. Next, account had to be taken of the swaying of our building in the wind. This is sufficient to crack the stone joints, unless provision be made for it. In every story of the Empire State Building one of the cross joints in the stonework is of corrugated lead of our own invention; it allows a little give, to take care of the movement and at the same time is made water-tight. The sway of the Empire State Building has been measured in strong wind-storms and the greatest variation of the mooring mast from the perpendicular was found to be two and a half inches on either side. The amount of the wind pressure under extreme conditions is astonishing; the records show a wind velocity exceeding 102 miles per hour. The anemometer did not register above this.

A steampipe expands an inch in eighty feet of length, at a variation of 100 degrees in temperature. This means a possible expansion of more than fourteen inches in the eighty-five stories of the Empire State Building. Radiators on the upper floors, if attached to the piping, would be raised off the floor when the pipes were hot. To provide for this, there are expansion loops in the piping. These loops are placed at intervals, so as to render the total ex-

pansion negligible. Similarly, unless a method were devised to overcome the pressure of a water column from the top of the building, it would amount to nearly 600 pounds per square inch at the lower fixtures, equivalent to the steam pressure in locomotives. At intervals are installed tanks into which the water is piped, and then redistributed downward to lower levels; in this way, and with the occasional use of pressure-reducing valves, the pressure at any faucet is not excessive. Without them, any tenant who washed his hands at an Empire State porcelain basin would have the surprise of his life. He might as well stand under Yosemite Falls.

I never think of the Empire State Building without recalling a cartoon that appeared from a clever pen soon after the skyscraper's completion. It showed an East-Side Italian matron saying to her proud son, gazing up at the breath-taking spire, "Your old man built that, Tony."

Strangely enough, the major drama in the erection of the Empire State Building was staged in Cincinnati and Newark.

Governor Smith had been interviewed in Florida, where he was on vacation, by a labor delegation who demanded that union labor exclusively be employed on the Empire State. The Governor told them that this was his preference and asked me, on his return, what my ideas were. I told him that we also preferred union labor, and used it where

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we could. He repeated these assurances to the labor men.

But trouble was ahead. In raising the New York Life Building, we had erected the steel ourselves, employing union housesmiths; and we thought we could do the same again. But now, when we took figures on the steelwork for the Empire State Building, we could not get a satisfactory price. There was a special reason for this. The job was so important and so much in the public's eye that the steel contractors decided to force an issue with the unions, and through it reach an agreement with them. For fourteen years they had been at odds over the question of open shop. The steel mills, led by the United States Steel and Bethlehem corporations, had organized the Iron League, a group of subcontractors to whom they sold steel at prices much lower than nonmembers could obtain. In this way, the union iron men had generally been defeated. Post & McCord, who belonged to the Iron League, could purchase and erect the steel for a quarter of a million dollars less than we could, ourselves. In the interests of our clients, we were forced to accept their bid.

When Post & McCord got our work, they told us that the controversy would probably soon be settled. There was a disposition on the part of Iron League members to patch up the differences of such long standing. Conferences were being held between Charles L. Eidlitz, the Iron League's representative, brother of Otto Eidlitz, the prominent builder, and Charles Massie, the housesmiths' local dele-

gate. They had practically reached an agreement. We had few misgivings in ordering Post & McCord to proceed.

Immediately the steelwork began, strikes were called against us, not in New York, where Post & McCord employed nonunion men, but in Cincinnati and Newark, where Starrett Brothers employed union men on important contracts that had been moving with great rapidity and involved large organizations. The jobs were practically stopped, and we began to lose heavily, especially since the Cincinnati building—the Carew Tower—was one that we were financing ourselves. We felt that we were being very unfairly treated by the housesmiths' union, to whom we had so long been friendly. As often as possible, we had erected steel ourselves and hired only their men, but on the Empire State Building our hand was forced; we could not in justice act otherwise.

We entered the prolonged negotiations between Massie and Eidlitz. When they had virtually come to an agreement, P. J. Morrin, national president of the union, came to New York and the meetings began to strike snags. For reasons of union politics, Morrin could not afford to let Massie settle such an important matter as this without his own officious participation. He wanted the credit personally for ending the trouble. He, therefore, repudiated everything Massie had done and declared he must open negotiations anew. We had meeting after meeting. I went away from each conference rather hopeful, yet nothing came from any of them. There were always new disagree-

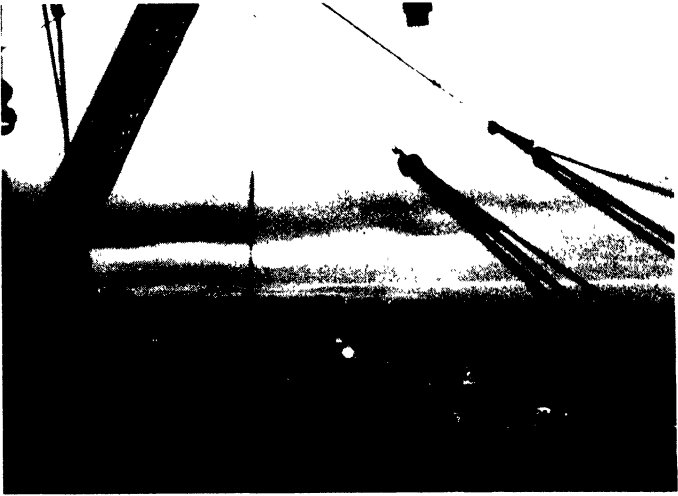
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ments. The whole matter could have been arranged with profit to both sides, but Morrin and the housesmiths had become arrogant, believing they would have everything their own way. All the New York delegates had foregathered, and those from Newark, headed by Brandle, the labor leader over there.

Toward the end of these interminable negotiations, when everything seemed certain to fail, I persuaded the delegates to meet in Governor Smith's office. I thought he could effect a compromise. Morrin and his supporters were there; Frank Walsh, attorney for the union; William Green, the president of the American Federation of Labor; Eidlitz, too, with several members of the Iron League. Green was no help; he maintained a discreet silence, never once broken.

Far from their reaching a peaceful conclusion, acrimonious arguments started and, after some rather rough talk, the Iron League members left. The trade union men then played their final card. I am inclined to think they had appeared for no other purpose. They had made no genuine effort to attain an understanding. They reminded Governor Smith of what they called his promise. The Governor replied that he had only passed on to them the information he had received from me, that he had no control over the execution of the contract, once it was signed. He had, he said, spoken in their behalf, as he said he would. We had made the decision, and it was admittedly in the best interests of the owners.

THE CLIMAX



EMPIRE STATE BUILDING

View from 86th floor at night

“Governor,” said Frank Walsh, “why don’t you throw these contractors off the job and build the building yourself?”

“That’s childish!” snapped Smith. “Starrett has a contract to put up this building! I can’t interfere and I won’t! Don’t you think this contractor has any rights?”

Finally, Morrin threatened the Governor with what the union men would do to him in his political career. It was known that he still had presidential aspirations. The Governor stood up behind his desk and his blue eyes flashed.

He said: “Have you men come here to blackmail me? I don’t give a damn whether you vote for me or not. Get to hell out of here!”

The strikes on our buildings in Newark and Cincinnati

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were costing us \$5,000 a day. Our clients protested. This went on for six weeks. Finally, the newspapers in Cincinnati took up our fight; the strikes were dropped. Our loss there was nearly \$200,000.

But the Empire State Building went on to completion as though nothing was happening to us.

After forty years of intense activity, the strain of erecting the Empire State Building in eleven months was too much for me and I suffered a rather severe nervous breakdown.

MY Uncle John, cabinetmaker in Dennison, Kansas, learned that I was writing a book. He offered to aid me.

“I am so crippled up I have to walk on crutches,” he said, “and I can hardly see and am very deaf. I go to my shop nearly every day and work a little, but being eighty-two years old, I can’t do much.”

Yet from his world of suffering came this:

“Great-grandfather was very well off in Scotland, and they selected a wife for grandfather, as was the custom. He said he had to spend his life with her, and he proposed to say who she should be. Three cheers for grandfather Starrett’s independence, for that is the stuff you and I are made of! Grandfather, I think, died before father was born and for ten years grandmother had a hard struggle to live and raise her boy. After grandfather died, his folks sent money from Scotland and bought a farm for her near Philadelphia. She told them to keep their old farm. She would nae touch it. Hurrah!”

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That was the spirit we five Starrett brothers had inherited from the Starrett side of the house.

But did we not have an equal inheritance of individuality from our mother? Her independence and energy had set us all on the road to security. And in her mature years, she had gone on, with new and emphatic proofs of individuality. Journalist, teacher, author, she became an important intellectual force in Chicago. Melville E. Stone, general manager of the Associated Press, said of her that she "wrote with a masculine pen, dealt brilliantly with almost every conceivable topic."

And she had still gone on, after we persuaded her to give up her school in Chicago, even after she had broken her hip in an accident and was permanently crippled—she had still gone on working with intense eagerness at things she felt must be accomplished. One of her many activities was as a member of the jury which passed on the people whose names were submitted as candidates for the Hall of Fame at New York University.

On our urging, she had retired to a quiet refuge in Portland, Oregon, to devote the remainder of her life to her books, her writing, and her friends; and there she died, well past eighty, leaving, as she felt, so much undone, so much that she might have accomplished if she had had more time.

We five Starrett brothers all possessed that independence by inheritance and training, an individualism so intense that we did not join forces until we were well past

middle life, and even then, not all of us. Ours was an age of individualism. A certain amount of independence and courageous initiative was deemed the staple of any man who wanted to get anywhere, in the first six decades through which I had lived. But by the time I had reached my seventh decade, the world's writers were beginning to speak of individualism in the past tense. My species of adventure belonged to history.

No, the pioneer spirit has not vanished, the spirit that impelled my father and my mother. But men are pioneering in new directions; they are pioneering with their minds, not their hands. I am all for this. But what I do not like is the popular disparagement of that past which—after all—has been my living present.

“Make no little plans. They have no magic to stir men's blood . . .” Burnham had counseled us. We, in our age of individualism, wrought a great country. I know this. It was my privilege to spend my youth under the aegis of a great man and to have had a genius for a brother. These men showed me what individual dreams and action could accomplish.

In the late twenties of this century, my company had at last achieved the position that embodied my desire. Our business was prosperous and exciting. We had established a high reputation for the new firm and were busy with important work. I was free from the restrictions that had con-

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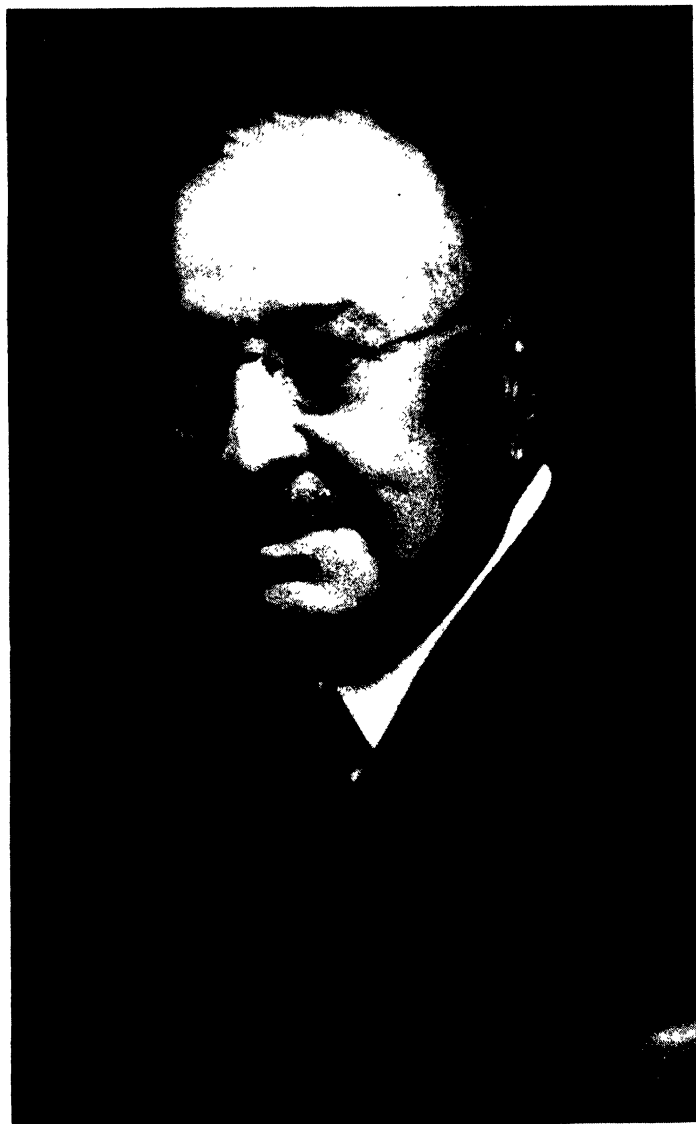
stantly irritated me in the Fuller Company. We could do as we pleased. We had no board of directors!

I had gone to my home in Florida in 1927. Meanwhile, my brother Bill remained in New York, where he circulated among banking friends. Expansion was in the air. It appealed to Bill's optimism. In many ways he belonged to a younger generation than I, a generation whose contribution to American business was organization for action on an even larger scale, by corporate means. All over America in those years, huge new mergers of important companies were taking place. Bill and his influential friends proposed turning over Starrett Brothers & Eken and its assets to a great corporation, much like Black's Realty Company. That is, we as builders were to be a subsidiary of a corporation which would mainly concern itself with realty and investment. Bill was enthusiastic about it. My first reaction was "No! Never!"

Here, again, was the threat of bigness, of a vast financial structure cutting me off from actual building. I had worked all the years to secure our present independence. Why give it up again? For this reason, I had already rejected the offers of Black to combine with the Fuller Company and had refused a proposal from Horowitz to combine with Thompson-Starrett.

My brother continued to argue. I came back from Florida to look into the proposal. I went to see Frederick H. Ecker, president of the Metropolitan Life Insurance Company, for whom we had built their two large annexes, and

AN AGE OF INDIVIDUALISM



FREDERICK H. ECKER

(Pach Bros.)

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whom I considered the ablest and soundest financier in New York. He advised me against the idea. It was difficult to disregard the word of a man in whose judgment I had so much confidence. Yet the future of building had never looked more rosy, my brother's optimism was hard to resist, and I did not feel that I should stand in the way of younger men. Since they favored adoption of this course, I consented.

The recognition that the building company received in the combination influenced me to a large measure. We would not be dominated by men who knew nothing of our trade; we ourselves would hold the controlling stock. In this, the new Starrett Brothers Corporation differed from the one projected by Black.

In the first two years, my brother's hopes were more than justified. Our joint business increased. Everywhere in the country we were offered work where we could be of assistance in financing. There was a promise of abundant mortgage money. Building ventures could be launched, with apparently reliable promises of tenancy to put the properties on a paying basis from the outset.

Then, suddenly, the economic horizon changed. November of 1929 was followed by a darker 1930. The Empire State Building was finished and stood ominously empty. The sharp economic decline that was to drive Black to suicide was under way.

In an immense warehouse project in New York we were associated in ownership with a railroad company. Our

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real estate department had reported that the space engaged provided a substantial income over all possible carrying charges. But when this building was about half erected, the Port Authority in New York launched a scheme for a huge counterpart and established rates which completely ruined our schedules. Here the government entered into competition with us and underbid us.

In Cincinnati, my brother Ralph, as head of Starrett Brothers of Chicago, had built the Carew Tower with a fine and large tenancy. Business fell off so badly that the tenants couldn't pay their rent. In New York the stock exchange business dropped away, brokers couldn't afford expensive offices. Building permits which, from 1925 to 1929, averaged over \$850,000,000 a year in New York alone, fell to \$50,000,000 in 1933 and 1934. The building business disappeared and we were compelled to cut our force to a skeleton, retaining only keymen. In common with all other property-holding companies, we not only cleared our decks but jettisoned some of our cargo.

Another Louisiana Bubble had burst, but at least something more than paper and forlorn dreams were left. The tall buildings remained. They would stand for a long time.

I had broken the rule of my business career to stay within the limits of what I understood and had mastered. I paid the price.

In December, 1930, Ralph died. After the World War, he and a friend had formed a building company of their own in Chicago that was later absorbed by the Starrett

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Corporation. Ralph's greatest achievements, in those closing years, had been the Book Tower and Book-Cadillac Hotel in Detroit, and the Carew Tower. This last might be called a summarizing of our skyscraper era; in one structure it combined a forty-eight-story office building, a thirty-story hotel, a large garage, and two department stores.

In March, 1932, when his assistance was most needed, Bill followed Ralph in death. Ralph was sixty-two. Bill was fifty-five. Like Theodore and Goldwin before them, they were victims of overwork and long nervous strain. All five of us had enjoyed unusual physical vigor and should have anticipated long lives. But we had labored too intensely in the American fashion.

That was what individualism spelled. If we had fought hard, we had never asked favors. I had seen men develop into great force and power, confident of themselves. That confidence in self was born only in unique and successful achievement.

I had married the present Mrs. Starrett, the former Elizabeth Root, who is the mother of my three sons.

It is now likely that building construction, as everything else in the economic and social system, is undergoing a fundamental change. There will always be individualists, but the era of Fricks and Stillmans and Blacks is of the past, and with it the builders of that era. They are like those vanishing Indians of my childhood. Large-

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scale construction operations would seem to lie, hereafter, in the field of great corporate undertakings. One thing appears certain; if the corporations do not absorb men's efforts, then governments will; but among great corporations, at least, the law of survival of the fittest still obtains. What will be the natural disciplinary force in public service remains to be seen.

There are two types of builders—those who have spent their lives learning their trade, many of them coming up from journeymen, masons, and carpenters; and those whose early training was won in the real estate business or the manufacture of clothing or some other industry.

In their former occupations these latter undoubtedly came in contact with the building business in such a manner as to indicate to them that it was possible to develop a great building business by hiring all the necessary talent to carry on. A clever draftsman in an architect's office could be hired for a few dollars to draw the elevations of a building. In those days a shrewd juggler of figures could show how on a certain plot of ground a building within a certain cost would promise large returns.

From this situation there developed a class of building speculators, who, knowing practically nothing about the building business, were, nevertheless, shrewd enough to see that by hiring unemployed men with a practical knowledge of building they could compete with the practical builders. The various fabricating shops would design the steel structures and foundations to get the inside track on

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the sale of steel. A business rapidly grew up, headed by foremen who had been employed by the practical builders and who would undertake to do the carpentry on these buildings and the masonry, or other branches, for a lump sum.

These men became known as "lumpers." When they took contracts, they adopted all sorts of short-cuts so as to come out with a profit. In times of slack employment, they would not pay the union scale and, in many cases, were rather careless about fulfilling the actual requirements of the specifications. The result was that a large number of buildings were erected in rather a shoddy manner.

During prosperous times, men of the second type have made remarkable strides in building. Their ideals have probably not been all that might be desired, but nevertheless, they have produced an immense number of large buildings.

"Let your watchword be order and your beacon beauty," had enjoined Burnham, to whose name my brother Ralph erected a building in Chicago. As I look at the skyline, I am sure that the watchword and the beacon have not failed in the skyscraper age. "Make big plans; aim high in hope and work, remembering that a noble, logical diagram once recorded will never die, but long after we are gone will be a living thing, asserting itself with ever-growing insistency." It may be that the spirit of Burnham, unconquered by the grave, can see his own

thought wrought imperishably into the skylines of San Francisco, Chicago, New York.

The Mayor of New York has been heard to remark that fifty years would pass before another skyscraper would be raised higher than the Empire State Building. In some ways, I want to believe that. Yet, to my mind again come the words of Burnham:

“Remember that our sons and grandsons are going to do things that would stagger us.”

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